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PLACENTAL IMPLANTS IN OPHTHALMOLOGY

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The use of placental implants in retinitis pigmentosa and other ophthalmic conditions has attracted a great deal of attention in recent years. Placental implantation is one of the forms of tissue therapy introduced by Filatov of Odessa. Tissue therapy consists of the implantation under the skin or the conjunctiva of such substances as liver, cadaver skin, placenta or aloe leaves, all of which have been preserved for some days at a temperature of 2° to 4° C, or of the injection of extracts of such substances.

Placental therapy has aroused the enthusiasm of some surgeons and the scepticism of others. The use of placenta in a tapeto-retinal degeneration may appear arbitrary and even capricious. It would be of interest, therefore, to examine how the method developed and to what extent the results claimed by the Russians are confirmed by recent work in other clinics.

History. Retinitis pigmentosa is a condition which is characterized by a failure of the dark adaptation process, with consequent night blindness. In 1935 Wald published his work on the identification and quantitative assessment of the carotenoids in the eye of the frog, *R. pipiens*. This gave a clue to the mechanism of dark adaptation, since Wald showed that vitamin A is the precursor of visual purple, as well as the product of its decomposition.

It seemed possible that a failure in the utilization of carotene was of importance in the pathological physiology of retinitis pigmentosa. The effects of vitamin A in this disease were studied by Josephson and Freiburger (1937). They found that oral administration of carotene and vitamin A was completely ineffective. Intramuscular injection of carotene in oil, however, gave rapid relief of night-blindness in their series of cases. In early cases of retinitis pigmentosa, improvement was noticeable within a week of the beginning of treatment and dark adaptation became 'comparable to normal' in one to four months. In advanced cases there was no improvement.

Filatov and his associates confirmed the value of this form of therapy by treating 60 cases of retinitis pigmentosa with intramuscular injections of cod liver oil. They claimed that 52 of their patients were improved. In view of the fact that oral administration of vitamin A was not successful, Filatov was led to believe that the favourable effects were due not only to the vitamin content of the oil, but to disintegration products of the liver formed in its preparation.

For many years before this work Filatov had been doing corneal grafts and he had been struck by the observation that scarred areas in the recipient cornea, situated around the graft, often cleared remarkably as a result of the intervention. This observation was first recorded by Desmarres more than 100 years ago and has been noted independently by other surgeons. Filatov showed that this clearing effect was more marked if the graft had previously been stored at a low temperature for some days. He believed that this was due to the formation of 'biogenic stimulants' which were produced in the tissue under conditions inimical to its survival. He also showed that these stimulants were not specific to the cornea, but could be produced in similar circumstances in other tissues, such as liver, skin, placenta and even in vegetable matter, such as aloe leaves kept in the dark at a low temperature. This, then, was the *point de départ* of tissue therapy.

The next step was to test whether the biogenic stimulants, produced in a stored tissue such as the placenta, would produce the same effect as the 'disintegration products' of liver in the cod liver oil. Filatov implanted placenta subconjunctivally in 22 cases of retinitis pigmentosa and claimed that all were improved. These claims are remarkable when it is remembered that Duke-Elder, in his *Textbook of Ophthalmology*, states that 'the treatment of retinitis pigmentosa is most unsatisfactory, and, indeed may be said not to exist'.

RESULTS IN RETINITIS PIGMENTOSA

Professor Dollfus of the La Pitié Hospital, Paris, did numerous placental inclusions for retinitis pigmentosa. He stated that it was certain that in some cases there was a degree of improvement, but that this was never very great. Functionally, the patients were generally very satisfied. They had the impression of seeing better and were better able to get about unaided. One of the criteria adopted in Paris is the ability of the patient to find his way about on the underground stations and passages of the Métro, where he had previously been unable to do so. Changes in the fundus were not seen and only slight improvement in the visual field was noted by this observer. Dollfus speaks of a state of 'visual euphoria' in some of these patients, who claim to see better after the treatment, but in whom no improvement in the visual acuity can be demonstrated. He believes that there is a psychological element in these cases. In one series of 11 cases, he found that three showed no demonstrable improvement, while eight others showed improvement in the visual acuity of 1/10 to 2/10. One of the best results was an initial vision of 2/10, which rose to 6/10, but later dropped to 4/10. Dollfus thinks that the results are encouraging and that the operation is a benign one without complications. When the effect of the treatment has worn off, it can be repeated.

Renard and Brégeat of the Hôpital Saint Louis, Paris, had similar results. In their first series of seven cases of retinitis pigmentosa, three showed an improvement in visual acuity of 1/10 and one an improvement of 2/10. There was a visual field enlargement of 5° to 10° in four patients, while three cases showed an improvement in dark adaptation by direct measurement. They found that once an improvement was obtained, it lasted about six months. A single implant acted on both eyes, but had its principal effect on the grafted side. The dominant and the recessive types of this disease responded to treatment in the same way. Unlike Filatov, these workers used fresh placenta, which was washed in saline and then placed in a penicillin solution for 15 minutes.

Teulières and Houssin studied the visual field and light sense in retinitis pigmentosa before and after placental implantation. They stressed that little improvement could be hoped for where the initial vision was below 1/50.

In Switzerland, Madame Moginier of the University Clinic, Lausanne, reported on 13 cases of retinitis pigmentosa, some of which the present writer had the opportunity of seeing personally. Fresh placenta was used. Vision was improved in eight cases, particularly in patients in whom it had been relatively good before. Thus visions of 0.5 and 0.6 went up to 0.6 and 0.8 respectively. The visual fields showed slight enlargement. Dark adaptation was little improved and then only in a few cases. In five patients there was no improvement in the condition. It was the advanced case, with low visual acuity and small visual field, which failed to respond.

Oxilia, in Italy, found that the treatment undoubtedly gave results in the less advanced cases. His findings are in general agreement with those of the previous authors. Cattaneo, of the University of Milan, claimed that 10 of his 20 patients with retinitis pigmentosa were improved by placental therapy, while from Syria, there is a report by Jébéjian of four cases treated by the Filatov technique, with three showing benefit.

Gordon, in New York, treated 128 cases of retinitis pigmentosa by injections of cod liver oil, shark's liver oil and placental implants. Of his cases, 34 showed a certain degree of subjective improvement, and 15 cases showed an improvement in visual acuity of one line on the Snellen chart. One patient improved by three lines. Gordon found that in most cases only one eye showed improvement and that, occasionally, a case got worse during the treatment.

Another American, Kronenberg, treated six cases of retinitis pigmentosa with aqueous extracts of placenta. He found no improvement in visual acuity in his series, but stated that there was an arrest in deterioration in patients who had previously gone rapidly downhill.

One of the problems brought out by this work is the difficulty of measuring visual acuities below 6/60 and of interpreting small differences below this level. The writer feels that Snell's table is of interest in this connection. When a patient's visual acuity is improved from 3/60 to 6/60, the gain may not appear great. Reference to Snell's table, however, shows that, in persons with a full visual field, a visual acuity of 6/60 represents a visual efficiency of 41%, where a visual acuity of 3/60 represents an efficiency of only 3.3%. It will be seen that the apparently small rise from 3/60 to 6/60 involves a 12-fold increase in visual efficiency. Factors of this nature may operate to explain the subjective improvement enjoyed by patients treated with placental implants, in whom only a slight increase in visual acuity is noted.

RESULTS IN MYOPIA

Placental implants have been tried out in high myopia with chorio-retinal complications and some writers have claimed promising results. Thus, Saint-Martin, of Toulouse, treated 30 cases of complicated myopia. He found that eight showed a considerable degree, and another 14 a lesser degree of improvement. The nature of the improvement was the disappearance of a scotoma in some cases; in others there was a correction of the deformed appearance of objects, diminution of vitreous opacities, or improvement in the visual acuity. Dollfus also found the results in this type of case encouraging.

Fromaget and Giffo, who used injections of aqueous extracts of conserved placenta in severe myopia, found that in 11 out of the 12 cases they treated visual acuity went up from 1/20 to 2/10. Metamorphopsiae and scotomata improved and vitreous opacities showed some clearing.

A dissident note is sounded by the Italian, Conti, on the basis of cases treated by this method at Parma. He advises against tissue therapy in myopia and states that he has seen it give rise to an aggravation of the condition.

RESULTS IN LESIONS OF THE CORNEA

Kronenberg, of New York, studied the effects of aqueous extract of the placenta in four cases of punctate keratitis and two of herpetic corneal lesions.

These had failed to respond to other treatment over a period of one month. He found the results to be gratifying. In old corneal opacities and tuberculous episcleritis, the same writer found that the treatment was ineffective.

Mercier, of Tours, treated three cases of neurotropic keratitis with placental implants. The vision improved in two patients and the corneal opacities in all three. He also used this technique with success as an adjunct to corneal grafting. In one case, a corneal graft, which was turning opaque, cleared up after two implants. In another patient he used placental implants to prepare the cornea for subsequent grafting. This was a recurrent keratitis, which had stubbornly resisted other treatment.

Jébéjian, in Aleppo, claimed favourable results in eight out of 10 cases of keratitis following on small-pox and in 34 out of 41 eyes with trachomatous opacities treated by the Filatov method. His results in seven cases of tuberculous keratitis, on the other hand, were in no way remarkable.

The problem of the measurement of the density of corneal opacities is of some importance in this context. The assessment of the degree of clearing of a corneal opacity in clinical practice depends upon a mental comparison of the lesion with the observer's memory of the same lesion on a previous occasion. The writer feels that so subjective a judgment is liable to error and that the ingenious apparatus he saw demonstrated by Decking in Groningen would help to eliminate this fault. This apparatus allows opacities in the cornea or lens to be compared with juxtaposed and graded opacities incorporated in the machine. This permits a numerical value to be given to an opacity, so that a quantitative element is introduced. Probably an apparatus of this sort would be helpful in establishing the value of therapy in cases of corneal opacities.

MODE OF ACTION

Before discussing the *modus operandi* of placental implants, it is necessary to establish that the graft does, indeed, produce an effect. The results quoted above seem to confirm the Russian claims that placental implants may, in some cases, modify favourably the metabolism of the adjoining tissues in a diseased eye. Filatov ascribes this effect to *biogenic stimulators*. but the chemical nature of this factor is not known. A placental implant is not a single substance, but a pot-pourri of vitamins, hormones and lipoids. Milford, in the U.S.A., found that placental extract can be broken into four factors:

1. Lipoid extract containing cholesterin and lecithin.
2. Immune gamma globulin.
3. Tissue coagulant.
4. The aqueous extract. This contains water-soluble vitamins and hormones. It is probable that the 'biogenic stimulant' is present in the aqueous fraction, since this produces a similar effect to implantation of whole placenta.

SUMMARY

A description is given of the development of placental therapy by Filatov in Russia and of some of the results obtained with this treatment, in Western clinics, in such conditions as retinitis pigmentosa, complicated myopia and certain corneal lesions.

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ABSTRACTS

Nicotine Acid Therapy of Dermatitis Herpetiformis. Johnson, H. H. and Binkley, G. W. (1950): J. Invest. Derm., **14,** 233.

In 12 cases of dermatitis herpetiformis oral niacin in doses of 50 to 200 mg. four times daily relieved pruritus and improved the lesions. There was complete suppression in six cases, partial suppression in four, and little or no change in two. Niacin produced no permanent cures and had to be taken in maintenance doses or resumed when there was a relapse. Niacinamide was less beneficial in six of the same cases.

Repository Penicillin Therapy of Yaws in the Haitian Peasant. Rein, C. R., Kitchen, D. K. and Pétrus, E. A. (1950): J. Invest. Derm., **14,** 239.

Excellent clinical results and good, but slow, serological response were obtained in large numbers of cases of yaws treated by short-term retard penicillin therapy (two and four day schedules, 1.2 and 2.4 million units).

Although 91.2% of patients showed a satisfactory serological response, only 40.6% were seronegative at the end of a year.

Abuses and Dangers of Local Sulphonamide Therapy. Garnier, G. (1948): La Presse Méd., **56,** 850.

The present immoderate use of sulphonamides by local application is followed in many cases by eczematous reactions, locally and generally. This cutaneous sensitization can in certain patients become a general sensitization which will manifest itself when sulphonamides are taken by mouth; and this intolerance can then prohibit the use of sulphonamides in cases of grave necessity. In other cases cross-sensitization to Novocaine and Paraphenylene diamine may arise. Sulphonamide-containing powders and ointments should be used only in specific cases and for a limited time; and they should be sold only on prescription.

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EDITORIAL

RECENT INVESTIGATIONS ON THE LIVER

Since 1849, when Gerlach[1] described the intimate structure of the liver, most workers and most textbooks up to the present day have adhered to the concept of the hepatic cord—a double row of cells surrounded by blood spaces called sinusoids, and with a bile canaliculus running between the cells through the axis of the cord. Such cords are stated to be tortuous, to anastomose with one another and to be arranged radially around the central vein of each liver lobule.

The validity of the cord theory has recently been questioned by Elias,[2] who has shown by three-dimensional and other methods of study that the liver of man and the cat cannot consist of cords or columns. In place of the conventional idea there must be substituted the concept of the hepatic lamina or wall, which is one cell thick, frequently perforated by stomata to permit the passage of sinusoids. The laminae are not straight and form a continuous system of anastomosing plates and connected walls which enclose between them the spaces of the sinusoids.

Elias likens this to the walls separating rooms in a building. The rooms (the 'lacunae hepatis') are much taller than wide, have many doors and windows connecting them, and the walls separating them are crooked as are the rooms themselves.

In man and the cat the walls or plates are curved and the spaces between them are like long sacs, large and irregular in shape. This type of liver is the saccular type (hepar sacculare). However, in the horse and rabbit the spaces (lacunae) between the walls are narrower and straighter, and are oval or circular on section; this is the tubular type (hepar tubulare). The bile capillaries run between the liver cells in hexagonal, intercellular and pericellular networks.

The vast system of spaces between the laminae forms a continuous labyrinth throughout the liver lobes.

Elias' work shows how the hepatic lacunae converge towards the central space and open directly into it, the hepatic laminae ending abruptly at the boundary of the central space. The portal space, on the other hand, is lined by a limiting lamina, with which many intralobular laminae are connected. Peripheral lacunae

1. Gerlach, J. (1849): *Beitrage zur Strukturlehre der Leber.* Mainz: E. Janitsch.
2. Elias, H. (1949): Science, **110,** 470; Amer. J. Anat., **85,** 379.

VAN DIE REDAKSIE

ONLANGSE ONDERSOEKE IN VERBAND MET DIE LEWER

Sedert 1849 toe Gerlach[1] die inwendige bou van die lewer beskryf het, het die meeste ondersoekers en handboeke tot op hede die opvatting van die lewer-string aangehang—'n dubbele ry selle omring deur bloedholtes wat sinusoïde genoem word en met 'n galbuisie wat tussen die selle deur die as van die koord loop. Sulke koorde is na verklaar word, gekronkel, mond bymekaar in en is straalvormig gerangskik rondom die sentrale aar van elke lewerlappie.

Die geldigheid van die koordteorie is onlangs in twyfel getrek deur Elias[2] wat met driedimensie- en ander metodes van ondersoek getoon het dat die lewer van die mens en die kat nie uit stringe of kolomme kan bestaan nie. Die konvensionele idee moet vervang word deur die begrip van die lewerlaag of -wand wat een sel dik is, met veelvuldige mondopeninge om die deurgang van die sinusoïde toe te laat. Die plate is nie reguit nie en vorm 'n onafgebroke stelsel van lae wat in mekaar uitmond en verbonde mure wat tussen hulle die ruimtes van die bloedholtes insluit.

Elias vergelyk dit met die mure waardeur kamers in 'n gebou geskei word. Die kamers (*lacunae hepatis*) is baie hoër as wat hulle wyd is, het baie deure en vensters wat hulle verbind en die mure wat hulle skei is krom soos die kamers self.

By die mens en die kat is die wande of plate gekrom en die ruimtes tussen hulle is soos lang sakke, groot en onreëlmatig van vorm. Hierdie tipe lewer is die sakvormige tipe (*hepar sacculare*). By die perd en die konyn is die ruimtes (*lacunae*) tussen die mure egter nouer en meer reguit en is ovaal of sirkelvormig in 'n dwarssnit; dit is die buisvormige tipe (*hepar tubulare*). Die galbuisies loop tussen die lewerselle in seskantige, intersellulêre en perisellulêre netwerke.

Die ontsaglike stelsel van ruimtes tussen die wande vorm 'n aaneengeskakelde doolgang dwarsdeur die lewerlappies.

Elias se werk toon hoe die lewerruimtes na die sentrale ruimte saamloop en regstreeks daarin uitmond en die lewerwande eindig skielik by die grens van die sentrale ruimte. Die poortruimte daarenteen is uitgevoer met 'n beperkende wand waarmee baie wande tussen die lappies verbind is. Ruimtes in die

1. Gerlach, J. (1849): *Beitrage zur Strukturlehre der Leber.* Mainz: E. Janitsch.
2. Elias, H. (1949): Science, **110,** 470; Amer. J. Anat., **85,** 379.

communicate with the portal space through a relatively small number of widely spaced holes in the limiting lamina.

The same worker describes the ramifications of the portal vein in detail, and points out that although there are certain basic patterns of branching of portal arborizations, these configurations are possibly not constant during life. The sinusoids and even larger vessels can contract or expand, thus regulating the flow of blood in the liver lobule.

The hepatic artery, whose distribution has been poorly understood, is shown to supply the interlobular spaces and its structures, while arterioles and arterial capillaries can be traced into the interior of the lobules. The central sinusoids are directly supplied; the existence of arterial openings into the peripheral sinusoids seems probable. Narrow points on the arterial capillaries appear to act as sphincters.

There is good evidence for various types of arteriovenous anastomoses in the liver, so that every part of the parenchyma receives a mixture of portal and arterial blood. Within the liver the circulation shows irregular rhythmicity, according to Seneviratne,[3] who has studied the physiology of the liver blood vessels *in vivo*; large tracts of liver may be inactive for varying periods of time with the sinusoids full, or nearly empty. It has been shown by other workers that in man exercise and standing excite splanchnic vasoconstriction to maintain arterial pressure, so that in ambulatory subjects pronounced reduction of blood flow in the liver may occur; metabolic functions of the liver then remain relatively unaltered, but excretory mechanisms are disturbed. Such changes may account in part, at least, for the harmful effect of early mobilization upon the course of infectious hepatitis, well recognized clinically and supported by biopsy and liver function studies in this disease.

In the dog it has been accepted by many workers that there is a sphincter (sluice or throttle) mechanism in the hepatic vein; thus some workers have demonstrated that digitalis glycosides act here, decreasing the venous return and output of the heart while blood is pooled in the liver and the portal system. In man evidence has been obtained against such an hepatic vein sphincteric mechanism. Thomas and Essex[4] have recently demonstrated with the aid of vinyl acetate as an injection mass (which provides casts of the hepatic circulation) that in the dog and sometimes in the cat, the entire hepatic venous system is thrown into spasm after the injection of certain substances, e.g. hydatid cyst fluid, histamine, digitoxin. Blood flow through the liver becomes arrested. Whether the hepatic veins of man behave in a similar manner is not known.

3. Seneviratne, R. D. (1949): Quart. J. Exp. Physiol., **35,** 77.
4. Thomas, W. D. and Essex, H. E. (1949): Amer. J. Physiol., **158,** 303.
Essex, H. E. and Thomas W. D. (1950): Proc. Mayo Clinic, **25,** 34.

buitenste wand is met die poortruimte verbind deur 'n betreklik klein aantal gate wat wyd uitmekaar in die beperkende wand geleë is.

Dieselfde ondersoeker beskryf die vertakkings van die poortaar uitvoerig en wys daarop dat alhoewel daar sekere basiese vertakkingspatrone van poortvertakkings is, hierdie vorms moontlik nie gedurende die lewe konstant bly nie. Die bloedholtes en selfs groter vate kan saamtrek of uitsit en sodoende die bloedstroom in die lewerlappie reguleer.

Daar word aangetoon dat die lewerslagaar, waarvan die verdeling onvolledig verstaan is, die interlobulêre ruimtes en sy bouwerke voorsien terwyl slagaartjies en slagaarbuisies na die binnekant van die lappies nagespoor kan word. Die sentrale bloedholtes word regstreeks voorsien; die bestaan van slagaaropeninge in die bloedholtes van die buitewand lyk waarskynlik. Dit lyk of nou plekke in die slagaarbuisies as sluitspiere dien.

Daar is vertroubare getuienis dat daar verskillende tipes slagaar-aarinmondings in die lewer is sodat elke deel van die parenchiem 'n mengsel van poort- en slagaarbloed ontvang. Volgens Seneviratne,[3] wat die fisiologie van die lewerbloedvate *in vivo* bestudeer het, het die bloedsomloop binne die lewer 'n onreëlmatige ritme; groot stukke lewer mag vir wisselende tydperke onaktief wees met die bloedholtes vol of byna leeg. Daar is deur ander ondersoekers getoon dat oefening en staan by die mens sametrekking van die ingewandsvate meebring ten einde slagaar-druk te handhaaf sodat daar by beweeglike proefpersone of -diere 'n duidelik merkbare vermindering van die bloedstroming in die lewer mag voorkom; metaboliese funksies van die lewer bly dan betreklik onveranderd maar die afwerpingsmeganismes is verstoord. Sodanige veranderings kan minstens ten dele die skadelike uitwerking verklaar wat dit op die loop van aansteeklike hepatitis het om 'n pasiënt te gou te laat opstaan, 'n uitwerking wat klinies erken word en deur biopsie-ondersoeke en ondersoeke na die lewerfunksie in hierdie siekte gesteun word.

Baie ondersoekers erken dat daar by die hond 'n sluitmeganisme (sluis-, klepmeganisme) in die lewer-aar is; derhalwe het sommige ondersoekers bewys dat *digitalis glycosides* hier 'n uitwerking het en die hoeveelheid bloed wat die are en hart oplewer, verminder terwyl die bloed in lewer en poortstelsel ophoop. By die mens is getuienis teen die bestaan van so 'n sluitmeganisme in die lewer-aar verkry. Thomas en Essex[4] het onlangs met behulp van viniel-asetaat as inspuitingsmassa (wat vorms van die bloedsomloop van die lewer verskaf) bewys dat bv die hond en somtyds by die kat die hele lewer-aarstelsel krampagtig saamgetrek word na die inspuiting van sekere stowwe, bv. van die sistvloeistof van die blaaswurm, histamien en digitoksien. Die stroming van die bloed deur die lewer word vertraag. Of die lewer-are van die mens op soortgelyke wyse reageer is nie bekend nie.

3. Seneviratne, R. D. (1949): Quart. J. Exp. Physiol., **35,** 77.
4. Thomas, W. D. en Essex, H. E. (1949): Amer. J. Physiol., **158,** 303.
Essex, H. E. en Thomas, W. D. (1950): Proc. Mayo Clinic, **25,** 34.

By newer techniques it has also been shown that, while most emphasis has been placed on the destruction of liver tissue and on the scar tissue and its contraction in cirrhosis of the liver, the really dynamic and important force is the regenerating parenchyma. In cirrhosis the relative amount of fibrous tissue is small, and the peripheral cells of the regenerating nodules show no evidence of constriction by connective tissue. By reconstructive (wax model) methods it has been shown that the regenerating nodules expand and press on large liver vessels narrowing their lumen, and in the case of smaller vessels the course is altered and distorted. These newer methods help to shift the emphasis from the destructive phase of the cirrhotic process to the regenerative phase.

The work being done on the anatomy, physiology and pathology of the intrahepatic circulation will change or modify many of our established ideas in the light of these newer investigations.

Deur middel van nuwer tegnieke is daar ook bewys dat, terwyl die meeste klem op die vernietiging van die lewerweefsel en op die littekenweefsel en die sametrekking daarvan by sirrose van die lewer gelê is, die werklik dinamiese en belangrike krag die vernuwende parenchiem is. By sirrose is die betreklike hoeveelheid van die veselagtige weefsel klein en die buitewandselle van die groeiknoppies toon geen tekens van sametrekking deur bindweefsel nie. Deur rekonstruksiemetodes (wasmodelle) is daar aangetoon dat die groeiknoppies uitsit en druk uitoefen op groot lewervate sodat hulle buisholtes vernou word en in die geval van die kleiner vate word die rigting daarvan verander en gekronkel. Hierdie nuwer metodes help om die klem van die vernietigingsfase van die sirrotiese proses na die groeifase te verskuif.

Die werk wat in verband met die anatomie, fisiologie en patalogie van die bloedsomloop binne die lewer gedoen word, sal baie van ons gevestigde idees in die lig van hierdie nuwer ondersoeke verander of wysig.

STEVENS-JOHNSON SYNDROME

REPORT OF TWO CASES TREATED WITH AUREOMYCIN

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The condition now generally called Stevens-Johnson syndrome in the English literature has also been described as 'erythema exudativum multiforme with pneumonia', 'ectodermose pluriorificielle erosive' and 'dermatostomatitis'. Although these names antedate Stevens and Johnson's (1922) account, and although eponyms are to be accepted with reluctance, it is as 'Stevens-Johnson' syndrome that the disease is most widely known by English-speaking clinicians. It should however be pointed out that Stevens and Johnson (1922) described a serious illness in which the ocular sequelae were frequent and often led to blindness.

The cutaneous lesions of erythema multiforme probably represent an allergic reaction to a variety of substances, bacterial, fungal, viral or chemical. The condition dealt with here behaves as a specific infective one, with involvement of the skin, eyes, mucous membranes and lungs. An evaluation of the effects of treatment is difficult, as the disease may last from 10 days to four weeks or more and, in different series, a varying proportion of survivors is left with permanent ocular damage.

No accurate statistics have so far been compiled. Ageloff (1940) collected reports of nine cases, of whom seven remained totally, and two partially, blind. Soll (1947) and Wright, Gold and Jennings (1947) reported a total of 29 cases of varying severity of whom only a proportion showed all the signs of the complete syndrome. In the latter series some of the patients were even afebrile. Thus it is understandable that such remedies as sulphanilamide (Elson, 1937), penicillin (Wright, Gold and Jennings, 1947) and nicotinamide (Weisberg and Rosen, 1946) should have been of apparent benefit in individual cases or small series, but have given disappointing results when tried more extensively. Because of the varying severity of the cases reported, the effects of treatment and statistics of recovery are fallible. It is again emphasized that the syndrome described by Stevens and Johnson includes pneumonia, is of several weeks' duration and carries an appreciable risk to life and sight.

Treatment with aureomycin has so far been reported only by Church (1950) and Lynas (1950). Each treated one case of Stevens-Johnson syndrome with 1 gm. of aureomycin 6-hourly and reported dramatic improvement. Before these authors' letters appeared aureomycin had been used in two cases in South Africa.

CASE RECORDS

Case 1. A 53-year-old female had coryza with laryngitis three weeks before the onset of the present illness. When this had subsided, she developed, on 15 August 1949, fever with pain in the chest on breathing and coughing. The pyrexia continued throughout the

illness and the physical signs, including the presence of blood in the sputum, pointed to a pneumonic process. On 22 August she complained of itching of the fingers and this was rapidly followed by the appearance of a rash on the hands and forearms, face and body. Sores were present in the mouth and a purulent conjunctivitis developed, along with oedema of the eyelids. On 24 August the patient was severely ill, with a high temperature and delirium.

The following treatments had been given: Sulphadiazine, 1 gm. 4-hourly from 18 to 23 August. This was stopped when the rash appeared as a drug eruption was suspected. Penicillin in 300,000 unit doses was given on 20 and 24 August. Neither of these treatments exerted any apparent effect on the course of the illness. Aureomycin, 250 mg. every four hours, was given by mouth from 24 August.

Figs. 1 and 2 (Case 2). Distribution of lesions one week after commencement of treatment with aureomycin. Note the penile lesion.

On 26 August one of us (L.J.A.L.) was asked by Dr. S. Swirsky to see the patient, who had then been on aureomycin for 48 hours. The temperature was normal. The patient was now mentally clear and obviously convalescent. On examination she showed lesions of bullous erythema multiforme on the face, neck and hands. In the last-named situation the bullae were haemorrhagic and confluent. On the body were numerous fading lesions, consistent with involuting, non-bullous lesions of erythema multiforme. The mouth presented an ulcerative stomatitis and the eyes a moderate degree of conjunctivitis, which was said to be improving.

The diagnosis was Stevens-Johnson syndrome, showing rapid recovery, the improvement having taken place in the two days during which aureomycin was exhibited. Subsequent progress was uneventful. Aureomycin was given in dose of 250 mg. four times daily for a further eight days, since which time the patient has been perfectly well.

Case 2. A 10-year-old male became ill on 19 February with cough and mild fever. Bronchitis was diagnosed and he was treated with sulphadiazine for two days. After initial improvement the fever recurred on 24 February and physical signs were now found in the mid-zone of the left lung, suggesting the possibility of a virus pneumonia. At the same time marked conjunctivitis was noted, as well as a few petechial spots on the palate and faucial pillars. On 25 February there

were signs of consolidation in the left lung and two small, red macules were noted on the chest. The petechiae now involved almost the whole buccal mucosa, including the gums. The temperature at 8 a.m. was 101° F. On 26 February a profuse erythematous and vesicular eruption had appeared, one lesion being situated on the glans penis at the urinary meatus (Figs. 1 and 2). Consolidation was now present in both lungs and the diagnosis of Stevens-Johnson syndrome was made (H.D.R.).

On 27 February the child's buccal, lingual and pharyngeal mucosae were completely covered with grey slough; the lips were swollen and everted and partly covered with shallow ulcers. Salivation was profuse. There was severe conjuctivitis affecting all parts of the bulbar and tarsal surfaces. The right eye showed a tag of fibrinous exudate in the anterior chamber. The face, trunk and limbs showed a profuse crop of erythema multiforme lesions, varying from ½ inch to 3 inches in diameter, many of the lesions showing a central vesicle or bulla. A shallow ulcer surrounded and involved the urinary meatus. Micturition was extremely painful and it was thought that there was voluntary retention of urine. The evidence of bilateral consolidation involving mainly the lower lobes persisted unchanged. The child was drowsy, obviously severely ill, and hardly able to swallow. The temperature was 103.6° F; pulse 114 and respirations 36 per minute. The leucocyte count was 14,500 per c.mm. of which 71% were polymorphonuclear cells. The electrocardiogram was normal.

Aureomycin 1,250 mg. was given in one dose by mouth and was followed by 250 mg. 4-hourly. Aureomycin in 0.5% solution was instilled into the eyes and used as a mouth wash every hour. Penicillin in doses of half a million units and streptomycin 0.5 gm. were given twice daily.

Twelve hours later the temperature had fallen to below 99° F for the first time since the onset of the illness. In the afternoon it rose again to 103.6° F, but rapidly fell to 98.4° F on the morning of 1 March. For the next three days an afternoon rise to 100° F or less was noted. The pulse and respiration rates followed the temperature trend. The most dramatic improvement was seen in the child's general condition, for after 24 hours' treatment he was alert, swallowing well and passing urine freely. During the next day the oral sloughs began to separate and salivation was much less. The pulmonary signs cleared within three days. It is noteworthy that fresh lesions appeared for the first three days of aureomycin therapy and even produced vesicles and bullae as before. Treatment with aureomycin was continued for another week. His recovery was rapid and complete and there has been no recurrence at the time of writing (17 April).

COMMENT

The duration of the illness in patients treated by older methods varied from 10 days to a month or more. It should be noted that in previous records cases lasting less than three weeks either had no involvement of the lungs or were subject to recurrences.

Both cases reported here were given aureomycin treatment after only eight days' illness, one of them while fresh skin lesions were still appearing, and both were obviously out of danger in 48 hours. This time agrees closely with those reported by Church and Lynas. One of us has seen a comparable case treated with penicillin and streptomycin, but not with aureomycin, in whom the condition persisted with full intensity for 22 days.

SUMMARY

Two cases of Stevens-Johnson syndrome were treated with aureomycin. Recovery occurred promptly in both and it is suggested that aureomycin acts as a specific remedy in this disease.

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RECURRENT NON-SPECIFIC URETHRITIS

ASSOCIATED WITH RESPIRATORY CATARRH, STOMATITIS, CONJUNCTIVITIS AND AN ERYTHEMATOUS VESICULAR ERUPTION OF THE LEGS AND FOREARMS

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This syndrome seems to fit in with the condition described in the literature as the Stevens-Johnson syndrome or erythema-multiforme-exudativum. However, the case described below presents some unusual features which I have not seen described in the literature at my disposal.

J. J. S., a European male aged 29 years, consulted me six months ago complaining of a purulent urethritis of five days' duration. He did not complain of any dysuria or frequency, but stated that he had had repeated attacks of urethritis, 2-3 a year, since 1941. He had received treatment at V.D. clinics but stated

that the gonococcus had never been found in urethral or prostatic smears.

The patient is a married man. His wife and children are healthy and his wife has never had any gynaecological complaints. He stated that these attacks of urethritis were always associated with a sore mouth and a 'cold on the chest'. The attacks did not come on at any particular time of the year, but he noticed that they were brought on by alcoholic excess or undue exertion or exposure. The urethritis was preceded by a few days of malaise and pains all over the body and a 'cold in the head and on the chest'. The urethral discharge was thick and yellowish from the onset and was not accompanied by dysuria or frequency. After a bout of alcoholic excess the urethritis would precede the respiratory catarrh but generally the condition commenced with an upper respiratory catarrh. A few days after the onset of the urethritis, he would notice little blisters all over the mouth and tongue. These would break and leave small ulcers. Then the eyes would become inflamed and he would develop blisters on both legs between the knees and ankles, and on the forearms, but never on the rest of his body. The condition would gradually clear up after 2-3 weeks, the rash on the legs and arms being the last to go.

The patient was a well built and moderately well nourished young adult European male. He was pyrexial (100° F.), looked seedy but stated he did not feel ill enough to go to bed. He had a productive cough—coughing up muco-purulent sputum.

There was a thick, yellow urethral discharge with superficial erosions of the glans penis and ulcers in the preputial sac. Several urethral and prostatic smears proved negative for the gonococcus.

Mouth. There were superficial ulcers on the buccal mucous membrane and on the sides of the tongue.

Chest. Coarse rhonchi all over the chest. No evidence of consolidation.

X-ray of the chest showed evidence of bronchial catarrh.

On the following day the bulbar conjunctiva of the right eye became inflamed. There was oedema of the upper lid and a superficial ulcer was noticed on the conjunctiva. A day later the other eye became similarly affected. There was no purulent discharge from the conjunctiva. The patient still had a slight temperature, 99° F-100°F.

The Wassermann reaction of the blood was negative.

Ten days after the onset of the urethritis there developed on the forearms and the legs between the knees and the ankles a patchy, erythematous rash. The patches were circular and varied in size from a threepenny piece to a florin. The centre of the patch became vesicular. The rash was itchy and did not affect any other portion of the body.

It was then decided to treat the patient with penicillin and he was given 500,000 units of procaine penicillin daily. There seemed to be improvement after the first injection and this was maintained. He was given three million units of penicillin and the urethritis, stomatitis and conjunctivitis cleared up after that; but the rash still persisted for a few days and then gradually disappeared.

The patient was quite well until a month ago when he again began to complain of malaise and cough. His temperature was 101° F. Two days later he had a purulent urethritis and a replica of the previous attack developed. The distribution of the rash was exactly the same, i.e. confined to the forearms and the portion of the legs between the knees and the ankles (Fig. 1).

X-ray of the chest again showed only evidence of respiratory catarrh.

Urethral and prostatic smears were negative for gonococci and he again responded well to a course of penicillin.

Discussion. This appears to be a case of Stevens-Johnson syndrome. The unusual features of this case which I have not seen described are:—

(a) The recurrence of the condition 2-3 times a year for nine years.

(b) The distribution of the rash. This was confined to the forearms and legs between the knees and the ankles. The rash only appeared between 10-12 days after the onset of the condition.

(c) No permanent eye changes in spite of the recurrent attacks and no evidence of urethral stricture.

(d) The association with respiratory catarrh, although cases have been reported which had an associated atypical pneumonia.

(e) The exact clinical picture is repeated with each attack.

(f) The attacks are precipitated by excess of alcohol or exposure.

I wish to thank Dr. H. Krafchik of Dumbarton House, Cape Town, for suggesting the diagnosis of Stevens-Johnson syndrome.

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THE MYTH OF THE DROPPING KIDNEY

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'*Canst thou draw up leviathan with a hook?*' Job 41: 1.
'*How oft the sight of means to do ill deeds makes ill deeds done.*' King John, Act IV, Sc. 2.

In a recent series of cases submitted for radiological investigation, the 'disease' of nephroptosis was diagnosed in nearly one third. The purpose of this paper is to comment on this pathological fantasy and the bizarre operation of 'nephropexy' which it encourages.

The real anatomy of the abdominal cavity and its contents was discovered by the advent of radiology. The early radiologists, however, ignorant of this high mission, were obsessed, as most of the profession is to this very day obsessed, with the pickled anatomy of the dissecting room. No less a thinker than the late Dr. A. E. Barclay confessed that he found it difficult to throw off these anatomical ideas acquired as a student, and to realize that the variations from this standard as shown in his X-ray plates were the real norm and not pathological deviations from it. For instance, the first clear picture showing the haustrations of the transverse colon must have come as a shock to the surgeon acquainted with the uniform bore and smooth outline of the structure as seen in the dissecting or post-mortem room. It is a tribute to prevailing common sense that some such expression as 'corrugated colon' was not invented to describe the apparent gross pathology and that an operation was not devised to iron out the irregularities!

The bad old days of gastroptosis and visceroptosis are past, and if 'gastropexy' or 'colopexy' appeared on any surgeon's operating list to-day, it would most certainly be a subject for ribaldry and 'innocent merriment'. But what of kidneys that move and float and drop? Why have we not yet emancipated ourselves from this relic of formalinised recumbent anatomy? I know of no definition of 'ptosed kidney' by those who use this expression. It seems to denote a kidney which lies more caudally than the observer thinks it should or has read in old anatomical books that it ought to do! The latter estimate was, I believe, arrived at by the classical method of hanging fresh and preserved corpses on hooks and observing the excursion of the abdominal organs.

Barclay (1936), among other radiologists, showed that all intra-abdominal structures moved freely and that kidneys in normal students might descend six inches or more. Clinically one knows that the kidney and ureter are so constructed that they can work effectively from any quarter of the abdomen. The majority of low palpable kidneys produce no symptoms, and others displaced to the opposite side of the abdomen by retroperitoneal cysts and tumours, work equally well even if lying on their backs.

In spite of these considerations 'nephroptosis' is, in wide circles, considered a disease worthy of serious notice and even demanding, or giving an excuse for, the operation of 'nephropexy'. At the beginning of this article I drew attention to the extraordinary number of X-ray reports which mentioned 'ptosis' of one or both kidneys. These reports were either obtained on my own cases or accompanied patients sent for consultation. The ones analysed were the 396 consecutive ones before December 1949 and came from seven different radiologists. In 113 a kidney was said to show 'ptosis' in greater or less degree. Now whatever the radiologist's own view, I have not the slightest doubt that the average practitioner in the presence of such reports would deduce that 'ptosis' not only indicated real pathology, but the probable causal pathology of the patient's disability. From this point it is only a short step to 'fixing' the kidney. I have little doubt that people are being operated on on the basis of these reports, and that the aim of this operation is to sew up the kidney into the dissecting room position.

Apart from the operation, kidney pads, believe it or not, are still prescribed. It is a tribute to human endurance that I recently found one of these barbarous contraptions attached to the corset of a woman who for 10 years had faithfully reconciled herself to this sharp-edged monstrosity sticking into the flesh below her ribs and bruising the right kidney on which it rested.

Logical thinking breaking through pre-conceived ideas would surely decide that the positions of the kidneys found in one-third of the cases examined was one of the normal positions, especially when many of the patients came merely for routine examination or had bladder irritation, or pain in the opposite loin to the kidney found 'ptosed'. Clinically more 'unptosed' kidneys were painful than 'ptosed' ones. A few kidneys which were so low that they could be grasped in their entirety had gone 'home' on the X-ray table and stayed up even in the erect position, so that they were classed as normal. It is to my mind certain that

if 396 people had been taken from the crowds in Eloff Street, and sent without comment for radiography, about a third would be reported as carrying 'ptosed' kidneys if the same standard were applied as in the cases referred to above. In point of fact the observations in the latter simply confirmed those already made by Barclay in regard to the mobility of normal kidneys, and the wide varieties of their possible situations.

I would have had no quarrel with the writers of the 'ptosis' reports if they had given exact measurements, without comment, of the kidney excursion when the patient stood erect. It is true this would have no clinical significance whatever, and if any surgeon read such significance into it that would be his affair, and the radiologist would be blameless. The use of the word 'ptosis', however, is to suggest pathology and treatment to deal with it. It gives *carte blanche* to those over-inclined to resort to operation, and at least puts the possibility of it into the minds of those with a more balanced outlook. Wittingly or unwittingly these radiologists act as purveyors to the kidney operators as their predecessors did to the gastropexy exponents.

To operate on any kidney because of its position is doubtful surgery; but at least a case, fallacious I think, but still a case, can be stated for the removal to an inaccessible position, of a low kidney which has become an obsession to the owner and which she can roll between her hands. To operate, on the other hand, on a kidney merely because a radiological report states that it is 'ptosed' is a surgical misdemeanor. It amounts to an assault on a normal kidney moving on its proper occasions, in order to deprive it of its fatty capsule, which incidentally moves with it, and attempt to shackle it to the actively moving psoas or quadratus muscles to the detriment of the function of all the tissues concerned. I say 'attempt' advisedly, for it is as necessary for abdominal organs to have free movement in order to adjust themselves to the various postures and activities of the body, as it is for a compass to have gimbals to allow it to conform to the rolling and pitching of the ship. Thus the incarcerated kidney constantly endeavours to break its imposed fetters and usually succeeds so that no great ultimate harm is done.

I remember well on one occasion toying with a redropped kidney between the cupped hands, while the lady owner enthused over her doctor and the wonderful relief he had given her through operation. Incidentally, though logic is not to be looked for in an unreal problem of this type, it is at least strange that patients are exhorted to put on fat to hold the kidney up, and operators are advised to remove every particle of fat for the same purpose. From the above considerations it is apparent that the damage done by the average nephropexy is of precisely the same order as that of every other illogical operation—unwarranted financial loss (to the patient) and exposure (also of the patient) to the limited danger inherent in every incision and anaesthetic.

It is another matter when the kidney has really been anchored. The difficulty of effecting this is testified to by the amazing variety of procedures recommended, from stitches penetrating the pleura to impalement by the separated periosteum of the twelfth rib. By dint of these heroic measures (the patient being the unsuspecting hero), the kidney may be rendered really immobile with serious results. I have done one nephropexy. I confess this with a certain amount of contrition, but it was a very long time ago. On the other hand, I have been compelled on more than one occasion to loosen kidneys that had been so effectively 'pexed' as to preclude smooth and painless function.

In a former publication (1946) I elaborated a view of the physiology of the ureter by which it and the kidneys could excrete in any attitude. I do not believe that mobility, however great, can cause obstruction to the outflow of urine, painful or otherwise. Pain and colic *can* occur in a low palpable kidney but in no greater degree than in one well up under the ribs. It may be necessary to expose either to deal with the condition causing the pain. *This condition is, however, never the position or degree of mobility of the kidney and therefore never requires fixation of the organ.*

Most of these painful symptoms are due to infection and inflammation and commonly and more specifically to that somewhat mysterious but very definite and prevalent female complaint known for lack of a better appellation as 'ureteritis', with the accompanying inflammatory strictures and sphinctroid spasms. This condition is amenable to relief or even cure by cystoscopic procedures and the use of antibiotics. The nature of the centrifuged and unstained deposit of the freshly catheterized urine as seen under the microscope throws a flood of light on the reason why some 'dropped' kidneys are painful and others symptomless. The 'undropped' ones suffer or are immune in similar proportions. An argument still used is that if there is evidence of stasis in the pelvic outflow of a 'ptosed' kidney, nephropexy is indicated. The test is carried out by injecting some radio-opaque fluid into the renal pelvis through a ureteric catheter and seeing how long it takes before the fluid is discharged. This experiment gives no trustworthy results. Unknown factors determine whether the introduced catheter and fluid will stimulate the smooth muscle of the pelvis to immediate contraction, and possibly systole amounting to spasm, or inhibit it altogether over a long period. Anyone who has had his eye glued to the ocular of a cystoscope waiting to see a contraction is aware how long the ureter can 'hold out' on one before showing any efflux whatever, and that in a kidney proved later to be completely normal. There is thus no association between the pain symptom and the mobility. Symptoms arising from the left kidney may predominate even when the right one lies as low as the pelvic brim. Right-sided pain can be abolished by treating the ureteritis and leaving the 'ptosis' as it is. The latter is never a predisposing cause for the former.

From the above I trust I have made plain my opinion that it is completely unjustifiable to operate on any kidney on the basis of an X-ray report of 'ptosis'. There remain to be considered the women who have been told that they have 'dropped', 'floating', or 'movable' kidneys and have even been shown radiological reports to this effect. These present a

psychological problem, but in almost every case they can be cured by the assurance that modern thought does not recognize such pathology, and by treating the real basis of the pain, which is usually inflammatory. The exception may be the patient who has had her attention drawn to a kidney so low that she can grasp it between her hands, and to whom it has become an obsession. This complaint is purely iatrogenic, caused by the patient's being told at some time by a doctor of the existence of the condition. I have never yet seen a woman who has consulted me because of the lump due to a low kidney which she had discovered herself. It is a natural instinct to contract the abdominal muscles in the act of self palpation and one knows how large abdominal tumours may grow unnoticed by the person concerned. One could hardly blame a surgeon for attempting, in an extreme case of this kind, to remove the kidney from the reach of the groping fingers, but he should be under no false idea that such a kidney is liable to injury or that it is anything but an unquiet psyche and not a pathological body he is trying to cure. I have never seen such a kidney injured except through the pressure of a 'supporting pad', and if the surgeon is himself convinced of the innocuousness of the condition, he can usually do as much by persuasion as by operation. In any case, it is so rare to encounter such cases that the case against nephropexy need not be weakened by considering them.

Finally, the kidney surgeon, perhaps more than most specialists, has to deal with a great number of patients whose pain is psychogenic and a symbol of unhappy circumstances in life. Such people are in danger if the pain is anywhere along the line of the ureter and an X-ray report speaks of 'ptosis' of the right kidney. It then behoves the doctor to remember that many operations heal the wounded psyche temporarily, but I have yet to learn that incompatible sex relations, injured self-respect, or intolerable home conditions can be cured, in the long run, by removing a normal appendix or hitching up an innocent kidney.

SUMMARY

1. The abdominal organs, including the kidneys, have a very wide range of movement. That of the kidneys is restricted only by the mobility and elasticity of the aorta and the renal vessels.

2. It is fallacious to think that function can be impaired and symptoms produced by this mobility.

3. The use of the word 'ptosis' should be abandoned in all radiological reports on kidney examinations as it implies a pathology which does not exist and misleads the practitioner who receives them.

4. To operate on a kidney on the basis of a so-called 'ptosis' as estimated by an X-ray film, is never in any circumstances justifiable.

5. The operation of nephropexy designed on fallacious pathology, physiology and anatomy, should take its place with gastropexy, and colopexy as an outdated operation of purely historical interest.

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MUSCULAR RELAXANTS

A COMPARISON OF THE ACTION OF DECAMETHONIUM IODIDE C_{10} & d-TUBOCURARINE CHLORIDE IN ANAESTHESIA*

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Apart from the limited use of magnesium sulphate and the blocking of nerves with regional analgesics, the employment of muscular relaxants as a major factor in anaesthesia dates from the introduction of curare in 1942 after two years of clinical trial.

Griffiths and Johnson[1] employed a preparation of the drug called intercostrin, while Gray and Halton[2] worked on the purer d-tubocurarine chloride which was isolated by King[3] in 1935. Since that time much work has been directed towards the production of synthetic curarizing agents, endeavouring to improve on the original drug.

The first muscular relaxant to follow curare was αβ dihydroxy (2 methylphenoxy)-proprane introduced as Myanesin by Berger and Bradley[4] in 1947. Myanesin, unlike curare, does not act at the myoneural junction but has a central action on the spinal cord, possibly involving the extra-pyramidal tracts[5]. In 1947 Dripps and Sergent[6] used the alkaloid dihydo-β-erythroidine as a muscular relaxant in 215 patients. This alkaloid is obtained from plants of the genus *Erythrina* and had been isolated in 1937 by Folkers and Major[7]. More recently (1949) the ammonium bases Decamethonium Iodide (C_{10} or Eulissin) and Tri(diethylaminoethoxy)

* From a paper read to the Transvaal Branch of the South African Society of Anaesthetists, December 1949.
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benzene triethiodide (Flaxedil) have made their appearance. As curare has already proved its value in anaesthesia, it is only natural that it should serve as a basis for comparison with other muscular relaxants and Musgrove[8] has aptly described it as the 'yardstick' by which the others are to be measured. In the past investigations of this drug have been much confused by the side actions of impurities, and in speaking of curare we shall, unless otherwise stated, refer to the pure preparation d-tubocurarine chloride.

The chief action of curare is to produce a block at the myoneural junction by interfering with the action of acetyl choline. There is also evidence that it may have a similar effect at other synaptic junctions in the autonomic ganglia and in the central nervous system, though these secondary actions are not clearly marked with clinical doses.

Gray and Halton[9], reviewing 1,500 administrations of d-tubocurarine chloride, refer to its undoubted synergistic action with anaesthetic agents and point out the greatly reduced doses of the latter required to keep the patient asleep. The remarkably light anaesthesia which suffices for an upper abdominal operation on a curarized patient has prompted a considerable amount of investigation concerning the effect of curare on the central nervous system.

Pick and Unna[10], working on frogs, showed that intercostrin had a depressant effect on the central nervous system; the central synaptic transmission being affected. Harroun, Becket and Fisher[11] found that electro-encephalograms showed slight dysrhythmia not incompatable with slight narcosis. Whitacre and Fisher[12], using large doses of intercostrin, produced unconsciousness in patients and were able to operate without using any general anaesthetic, though local analgesia was used on some of the cases. On the other hand, Kellgren, McGowan and Wood[13] showed that pain stimulation curves, which were positively affected by small doses of morphine, were unchanged in curarization. In the same year Prescott, Organe and Rowbotham[14] stated that, in clinical dosage, d-tubocurarine chloride had apparently no effect on the central nervous system when given either intravenously or intramuscularly. Smith[15] found no changes in the electroencephalogram, consciousness or sensorium, or any aspect of higher central nervous system function, following a dose of curare 2½ times that necessary for complete respiratory paralysis; while Paulson and Lundy[16] found that the addition of d-tubocurarine chloride did not increase the narcosis time of a standardized dose of pentothal in series of four different species of animals.

Thus, while evidence concerning the action of curare on the central nervous system is conflicting, it would appear, at all events when using the purer preparation, that central effects are absent or minimal in ordinary clinical dosage, and that the qualities of d-tubocurarine chloride as a muscular relaxant depend mainly on the strength and stability of the peripheral neuromuscular block which it imposes.

The Clinical Significance of Muscular Relaxation. The Surgeon and Anaesthetist work under far more complex conditions than those existing in the laboratory, and muscular relaxation in the operating theatre is not to be measured in terms of head-drop units. A good muscular relaxant must, with light anaesthesia, give flaccidity of the muscles and quiet respiration, not only when there is little disturbance, but in the face of the severest surgical stimulus likely to be inflicted in the course of the operation. Should such a stimulus break through the block it will probably result in:—

(*a*) Some degree of rigidity of the abdominal muscles;

(*b*) Respiratory reaction evidenced by the patient's straining.

Such reactions cannot occur when the muscles concerned are completely paralysed but may do so, to a varying degree, if the paralysis is only partial.

The relationship between the extent of the paralysis in the respiratory and skeletal muscles is important. Except in the case of thoracic surgery, natural breathing is physiologically superior to artificial respiration, and depression or paralysis of the respiratory muscles must be regarded as part of the price which has to be paid for the advantages of relaxation under light anaesthesia. The present tendency is to seek a relaxing agent which will give operating conditions equal to those afforded by curare, while at the same time sparing the respiratory muscles. Some claims in this respect have been put forward for decamethonium iodide (C_{10})[17] and it was largely with a view to testing these claims that our observations were made.

THE INTRODUCTION OF DECAMETHONIUM IODIDE (C_{10})

As early as 1869 Brown and Fisher[18] showed that the characteristic action of many ammonium bases, in particular the quarternary combinations, was a paralysis of motor nerve endings. Decamethonium iodide (bistrimethylammonium decane diiodide) is a bisquarternary ammonium salt.

The pharmacology of C_{10} was investigated by Paton and Zaimis[19]. They claimed that it blocked the transmission at neuromuscular junctions, affected skeletal muscles more than respiratory muscles, had only a slight paralysing action on the autonomic ganglia and had very little tendency to liberate histamine or heparin. Its action was not reversed by the anti-cholinesterases but by drugs of the pentane group.

The effect of C_{10} on the conscious human subject was tried by Organe, Paton and Zaimis[20]. They found that a dose of 3 mg. slowly injected intravenously, produced a muscular paralysis which reached a maximum in four minutes. Recovery began in 10 minutes and was complete in one to two hours. They found that the paralysis affected first the eyelids and facial muscles and later the neck, trunk and limbs. Respiration was not embarrassed though the vital capacity was decreased by about 30%. The degree of paralysis varied in different subjects and the writers estimate it as roughly comparable to that produced by 15 to 20 mg. of d-tubocurarine chloride.

In 1949 Organe[17] investigated the action of the drug in anaesthesia in a series of 150 cases. He states that a single intravenous injection of 3 mg. in light surgical anaesthesia produced, in most patients, good muscular relaxation without unduly depressing respiration. He

found that larger doses (4 or 5 mg.) usually produced apnoea for 10 to 20 minutes. Organe estimates a dose of 3 mg. of C_{10} as approximately equivalent to 15 mg. of d-tubocurarine chloride.

Hewer, Lucas, Prescott and Rowbotham[21], on the other hand, in a report based on a study of 85 cases, came to the conclusion that decamethonium iodide gave muscular relaxation comparable to curare, only when given in sufficient dosage to paralyse respiration. They used it in association with various combinations of thiopentone, nitrous oxide, cyclopropane, ether and trichlorethylene and found that the drug appeared equally effective in all the anaesthetic combinations employed.

COMPARISON OF THE EFFECT OF C_{10} (EULISSIN) AND D-TUBOCURARINE CHLORIDE ON THE CONSCIOUS SUBJECT

In an attempt to get a direct comparison of the effect of approximately equivalent doses of C_{10} and d-tubocurarine chloride on a conscious observer, we administered, on separate occasions, 4 mg. of C_{10} and 15 mg. of d-tubocurarine chloride to the same subject.

Using C_{10}, 3 mg. were injected intravenously (1 mg. at a time) in two minutes and a further 1 mg. three minutes later. Ptosis and diplopia came on almost immediately and within less than five minutes the subject was unable to move his limbs or lift his head. Respiration, though not seriously embarrassed, was restricted for about three minutes, the intercostal muscles being paralysed and the breathing entirely diaphragmatic. The abdominal muscles were relaxed.

Recovery began in about 12 minutes. The subject was able to sit up in 16 minutes and walk in just over 20 minutes. At the height of the paralysis there was still considerable power in the masseters and the subject could speak normally throughout. Facial expression was but little interfered with. Complete return to normal occupied approximately an hour more.

The intravenous injection of 15 mg. of d-tubocurarine chloride resulted, except in the case of the upper limbs, in a paralysis which was considerably more intense and protracted than that produced by C_{10}. Respiration was more restricted and for a longer period. The recovery times, as indicated by the ability to sit up, stand and walk, were increased by 40-50% and the residual muscular weakness lasted much longer. For about 12 minutes the subject was able to speak only in a whisper and the paralysis of the masseters was much more pronounced. The face was mask-like for 45 minutes and a slight weakness of the right side persisted for several hours.

The main points of contrast therefore were:—

(*a*) The paralysis caused by curare was more intense and lasted longer.

(*b*) Curare had a much greater effect on the laryngeal muscles and the muscles of the jaw.

C_{10} (EULISSIN) IN ANAESTHESIA

Eulissin was administered to 223 patients for a variety of operative procedures. In over 90% of these operations the drug was given to produce muscular relaxation for various reasons. In the few remaining cases the object was to observe some of its other effects.

Attention was mainly directed to observing (*a*) the quality and duration of the relaxation produced by C_{10} and (*b*) its effect on respiration. Blood pressure and pulse records were kept in most of the major cases and all patients were closely watched for postoperative complications.

OPERATIVE PROCEDURES

Upper Abdomen	
Cholecystectomy and gastrectomy	17
Mid Abdomen	
Resection of bowel, repair of ventral hernia, laparotomy, etc.	19
Thoracotomy	1
Smithwick	1
Gynaecological Abdominal Sections	20
Vaginal Hysterectomy	3
Extraperitoneal Operations Requiring Relaxation	
Lumbar sympathectomy and prostatectomy	6
Appendicectomy	28
Inguinal and Femoral Hernia	27
Perineal Operations	14
Operations in which C_{10} was given Mainly to Assist Intubation of the Larynx	
Dissection of tonsils (31), oesophagoscopy, bronchoscopy and other procedures about the head and neck	77
Other Operations	10
Total	223

In the great majority of these operations anaesthesia was maintained with fractional pentothal and nitrous oxide and oxygen. In upper abdominal cases, in addition to the above, other combinations were used such as pentothal followed by nitrous oxide, oxygen and ether, or pentothal and cyclopropane. Ether was also used for maintenance in most of the tonsil dissection cases.

Effect of C_{10} on the Respiration. Administered in association with pentothal sodium the effect of C_{10} in depressing the respiration is sometimes considerable though usually relatively brief. Typically an induction dose of 0.5 gm. of pentothal with 3 mg. of C_{10} may cause an apnoea lasting for several minutes. This is often followed by a variable period of shallow diaphragmatic breathing at the end of which there is a rather abrupt return of full intercostal action.

The effect of both pentothal and C_{10} show great variation. We have given 5 mg. of C_{10} and 0.75 gm. of pentothal with only transient respiratory depression but, on the other hand, we have had to assist respiration for more than half an hour, in an apparently normal subject, after a dose of 3 mg. of C_{10} and 0.5 gm. of pentothal. The possibility of idiosyncrasy to C_{10}, as described by Gray and Halton[22] in the case of curare, cannot be ruled out and at least one such case has been reported. If a large initial dose is contemplated it may, therefore, be wise to give it in two stages.

In a short series of cases we tried the effect of a full 5 mg. dose of C_{10} in the absence of the complicating influence of pentothal. Anaesthesia was induced with Nitrous oxide-oxygen and minimal ether and a full 5 mg. dose of C_{10} was injected as soon as the patient was settled. In only one patient out of six did the respiration require any assistance and that only for about two minutes. The average time for the return of normal breathing was about seven minutes. We did not find,

as stated by Organe[17], that thoracic and abdominal breathing fail and recover together though the gap is very much less than in the case of curare. Abdominal breathing was very obvious in the cases where pentothal was omitted and was also observed in the conscious subject.

Muscular Relaxation. C_{10}, in doses of 3 to 5 mg. gives good muscular relaxation lasting up to half an hour if the depth of anaesthesia is sufficient. An anaesthetist accustomed to the use of curare, however, may well tend to employ too light a plane with C_{10} especially in operations on the upper abdomen, and then nothing short of a full dose, causing complete respiratory paralysis, is likely to give satisfactory relaxation.

A return of active reflexes will accompany or even precede the resumption of normal respiration and the apnoea produced by the drug may, not infrequently, pass into a state of breath holding and spasm without any intervening period of spontaneous breathing. This disconcerting situation is not often met with when using curare.

Cardiovascular System. The original writers report little effect by the drug on the heart and bloodvessels. Hewer *et al*[21] found no significant changes in the cardiovascular system as evidenced by recordings of blood pressure, pulse rate and electro-cardiogram and no evidence of increased bleeding. Organe[21] mentions considerable fluctuations in the blood pressure during operation with the general level well maintained.

In some cases we noticed a drop in pulse pressure following the administration of C_{10} which seemed to be occasioned mainly by a rise in the diastolic level. In addition several patients temporarily exhibited an almost alarming pallor although the blood pressure was well maintained, the appearance rather resembling that produced by an injection of pituitrin. Pallor is mentioned by Wilson and Gordon[23] in connection with the administration of Flaxedil, and Organe, Paton and Zaimis[20] in one of their experiments reported evidence of vasoconstriction in the capillaries of the nail bed. Peripheral vasoconstriction, however, was certainly not a constant factor and bleeding from cut surfaces was sometimes considerable.

Marked variations in blood pressure occurred occasioned by operative stimuli in association with light anaesthesia.

C_{10} in Upper Abdominal Surgery. We employed C_{10} in upper abdominal operations (chiefly cholecystectomy and gastrectomy) with the following combinations of anaesthetic agents:

i. Fractional pentothal sodium with nitrous oxide and oxygen (using 30—50% oxygen).

ii. Pentothal sodium induction followed by cyclopropane and oxygen.

iii. Pentothal sodium induction followed by nitrous oxide, oxygen and ether.

The first combination affords the best opportunity of comparing the action of the drug with curare. The total amount of pentothal sodium injected is known and should be carefully watched; while the nitrous oxide and oxygen mixture has little more than a supplementary analgesic effect. With the more powerful inhalation anaesthetics it is, perhaps, too easy to vary the depth, sometimes almost unwittingly. This is especially true when using cyclopropane.

The following charts, taken from a few typical operations in which C_{10} and d-tubocurarine chloride were employed with different anaesthetic combinations, are designed to illustrate the quantities of muscular relaxant and barbiturate used, and their effect on respiration. As the mere recording of the respiratory rate is meaningless, except when a complete apnoea is produced, the continuous line represents the approximate *respiratory exchange* as judged by the movement of diaphragm, chest and breathing bag. The shaded areas are periods where respiration was artificially assisted.

Charts I and II are from two operations for cholecystectomy under fractional pentothal and nitrous oxide and oxygen anaesthesia. d-tubocurarine chloride was used in the first case and C_{10} in the second. In both cases relaxation was excellent and there were no complications.

The two operations were of approximately the same duration and slightly more pentothal was used in the second case. A total of 14 mg. of C_{10} was required (a considerable dose compared with 21 mg. of d-tubocurarine chloride). *Obtaining satisfactory relaxation with C_{10} did not seem to permit of any noticeable sparing of the respiratory muscles.*

Chart III, which is of particular interest, is from another cholecystectomy. The patient, an extremely obese woman of 47, was a difficult subject. During the first 1½ hours 15 mg. of C_{10} and 1.5 gm. of pentothal sodium were given without getting satisfactory relaxation for more than very brief periods. A change to light cyclopropane anaesthesia after fifty minutes produced quieter respiration and a relative improvement, but relaxation was still unsatisfactory.

After 1½ hours a dose of 5 mg. of d-tubocurarine chloride was given with striking effect. It produced an immediate apnoea lasting about 15 minutes and assisted respiration was required for five minutes longer. Perfect relaxation followed and, though the operation lasted a further hour, no additional pentothal or relaxants were required. The peritoneum was closed with ease and reflexes were present at the end of the operation. Cyclopropane was discontinued as soon as the curare had been given and a return made to nitrous oxide and oxygen.

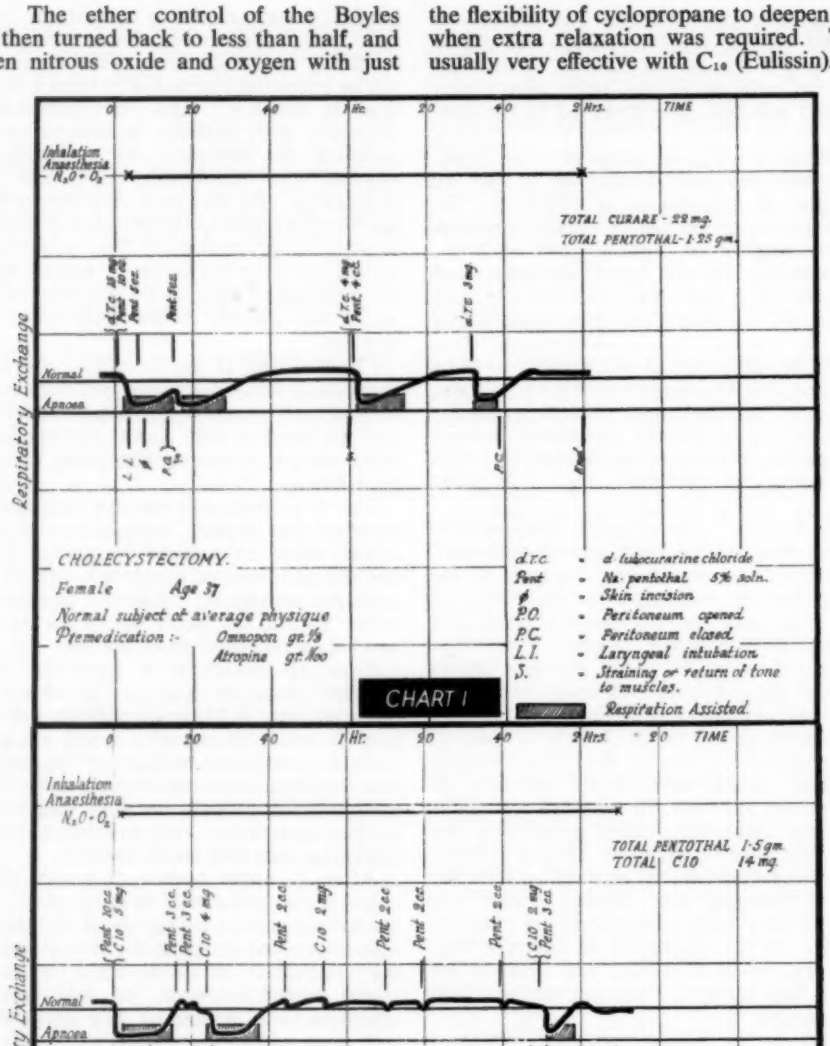
This remarkable effect of a small dose of d-tubocurarine was not an isolated instance but was confirmed in four other cases where considerable doses of C_{10} did not prove satisfactory. In each instance the curare immediately gave perfect relaxation. In these cases the C_{10} and curare appeared greatly to enhance each others action. Paton and Zaimis (working on cats) found that d-tubocurarine chloride was unaltered in potency when given after C_{10}.

Using deeper anaesthesia it is possible to get good muscular relaxation with much smaller doses of C_{10} and, at the same time, preserve normal respiration.

Chart IV is from a long gastrectomy in a man aged 48. The patient received 0.5 gm. of pentothal sodium. He was then taken to third plane anaesthesia with ether

and intubated. The ether control of the Boyles Apparatus was then turned back to less than half, and the patient given nitrous oxide and oxygen with just enough ether to maintain a light second plane anaesthesia. Good relaxation with normal respiration was maintained using 9 mg. of C_{10} in 3½ hours.

Chart V illustrates a case where full use was made of the flexibility of cyclopropane to deepen the anaesthesia when extra relaxation was required. This method is usually very effective with C_{10} (Eulissin).



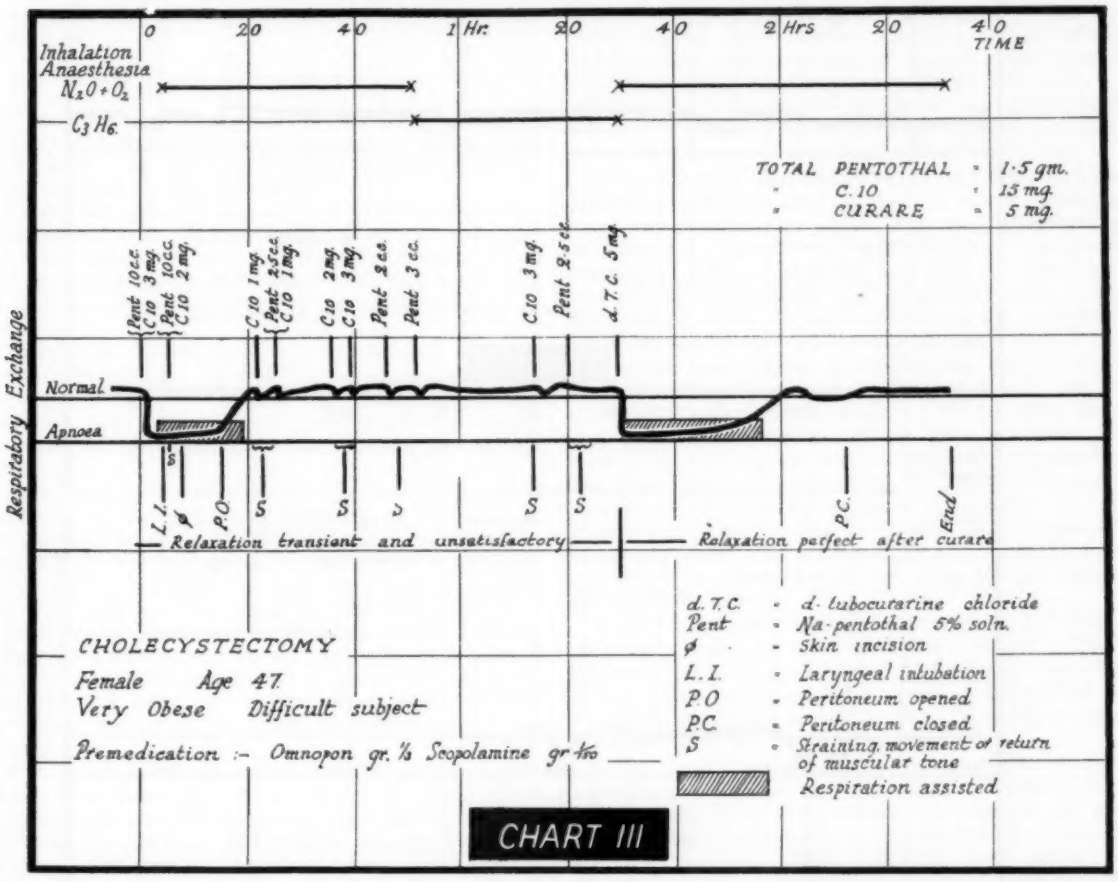
Closure of the peritoneum. It has been suggested that C_{10}, because of its transient effect on the respiration, should be a valuable drug where extra relaxation is required towards the end of an operation to facili-

tate closure of the peritoneum. We found, however, that unless the anaesthesia is adequate, a considerable dose may be given without producing any appreciable relaxation. Thus, in a patient where relaxation had been satisfactory until traction was made on the peritoneum in order to close it, 3 mg. of C_{10} had no effect. Deepening the anaesthesia with cyclopropane quickly gave perfect relaxation.

C_{10} in Other Surgical Procedures: Mid and Lower Abdomen. In operations about or below the level of the umbilicus where reflex stimuli are less disturbing and slight straining, should it temporarily occur, is less likely to embarrass the surgeon, C_{10} usually gives excellent results with very light anaesthesia. Such operations as laparotomy, resection of bowel, repair of ventral hernia and abdominal gynaecological procedures are typical examples.

In appendicectomy and inguinal herniorrhaphy, where pentothal sodium and nitrous oxide may be sufficient in themselves, C_{10} is an added refinement. It gives all the relaxation that the most fastidious surgeon could desire and renders it unnecessary to incur the disadvantages of using large amounts of pentothal in resistant patients. These results can be obtained without paralysis of the respiratory muscles and normal respiration at the close of the operation can be assured.

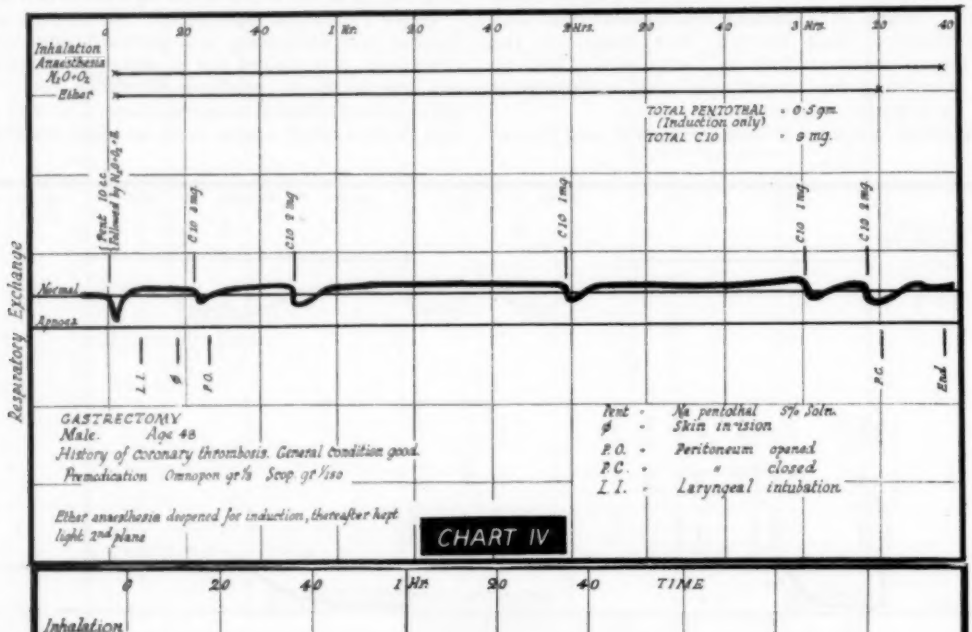
Extra Peritoneal Operations. In operations such as lumbar sympathectomy and prostatectomy where good relaxation is required for access, but surgical stimuli are less likely to produce disturbing reflex reactions than intra-peritoneal manipulations, C_{10} with pentothal and nitrous oxide seems to be an ideal combination.

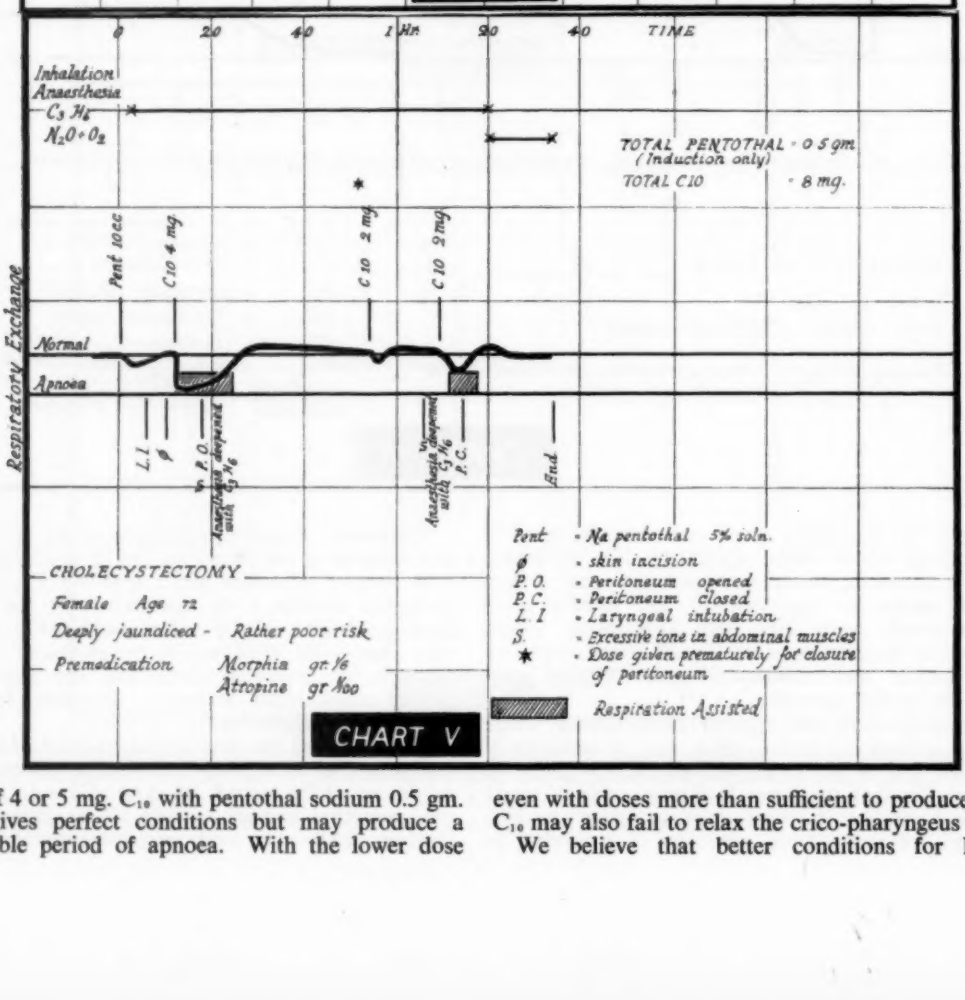


Perineum. Excellent relaxation of the anal sphincter and muscles of the perineum can be produced by using a mixture of pentothal and C_{10} (5 mg. C_{10} to 1.0 gm. pentothal sodium). In operations on the perineum these conditions can be realised with no more respiratory depression than would be produced by similar amounts of pentothal alone and the smaller doses needed allow rapid recovery. Bleeding, however, is sometimes considerable.

Relaxation of the Jaw and Laryngeal Muscles. C_{10} and pentothal were given to a number of cases to assist intubation of the larynx. A dose of 3 mg. C_{10} with 0.5 gm. pentothal sodium usually allows easy intubation (oral or nasal). The cords may come together on intro-

ducing the laryngoscope, but not tightly, and a well lubricated tube can easily be passed without trauma. the masseters were sometimes not well relaxed, and in a few difficult cases there has been complete failure





A dose of 4 or 5 mg. C_{10} with pentothal sodium 0.5 gm. usually gives perfect conditions but may produce a considerable period of apnoea. With the lower dose even with doses more than sufficient to produce apnoea. C_{10} may also fail to relax the crico-pharyngeus muscle.

We believe that better conditions for laryngeal

intubation are obtained with equivalent doses of d-tubocurarine chloride, and this was also suggested by our observations on the conscious subject. C_{10}, however, usually gave very satisfactory results and the rapid return of full respiration was a decided advantage.

In tonsil dissections the use of C_{10} permits the Davis Gag to be introduced and the operation commenced as soon as the patient has been intubated. We preferred, in these cases, to use a little ether rather than repeat the pentothal and C_{10}. This should be done from the start or gagging will probably accompany the return of full respiration.

POST-OPERATIVE COMPLICATIONS

The present series of cases is too small for a detailed analysis of post-operative complications to afford much information. We did not encounter any that could be definitely attributed to the use of C_{10}.

Pulmonary complications were no more frequent than after other forms of anaesthesia. Two patients, one following appendicectomy and the other hysterectomy, had minor degrees of atelectasis. Both rapidly cleared up with breathing exercises and the encouragement of coughing.

There was no evidence of any increase in post-operative vomiting. Neither C_{10} nor curare produced the slightest degree of nausea when administered to the conscious subject, although no precautions were taken to ensure an empty stomach when making the experiments.

Other writers have alluded to C_{10} as having a possible influence on post-operative retention of urine[17]. In several cases a history of difficulty with micturition was volunteered, but the operation was always a probable factor and this complication never occurred in cases where the effect of the operation could be excluded.

One patient developed a left-sided parotid swelling within 24 hours of operation. As parotitis is one of the rarer manifestations of iodism, the patient was given mist. pot. iod. after the swelling had subsided to see if any other symptoms of iodism developed. This was not the case.

Two deaths, both in elderly females, occurred after major abdominal operations. One case was due to massive pulmonary embolus (confirmed at post-mortem examination). In the other case the symptoms (sudden dyspnoea and pain in the chest) were similar but an autopsy was refused. Both these patients died suddenly in the third post-operative week, after a previously uncomplicated convalescense, and there was nothing to implicate the anaesthetic in any way.

DISCUSSION

The most important contrast between the action of C_{10} and d-tubocurarine chloride is the rapidity and suddenness with which the peak of the muscular paralysis produced by the former drug wears off. This rapid elimination is sometimes a decided advantage, and ample relaxation usually remains after the return of full intercostal respiration for operations on the lower abdomen, or for extra-peritoneal operations where relaxation is required.

In upper abdominal operations, where a continuous play of surgical stimuli tends to produce straining under light anaesthesia, anything short of the maximal effect of C_{10} is usually inadequate. Sudden recovery may be a source of embarrassment and the patient may be left 'high and dry' at a critical stage of the operation with inconveniently active reflexes. This is not typical of curare, where the return of muscular tone and reflex activity is more gradual, and the anaesthetist has time to make the necessary adjustments without the smoothness of the anaesthesia being disturbed. With C_{10}, unless deeper supplementary anaesthesia than suffices with curare is used, continuity of relaxation can only be insured by giving repeated doses without waiting for the signs of under-curarization to appear, and this usually involves at least as much respiratory paralysis as would result from the use of d-tubocurarine chloride itself.

The question of sparing the respiratory muscles, while producing good surgical relaxation, is an important issue. It is true that drugs such as d-tubocurarine chloride, C_{10} and Flaxedil affect different groups of muscles to different degrees, and that the respiratory mucles tend to be spared with moderate doses. Their main action is, however, localized at the myoneural junction.

It would seem logical to suppose that the chance of such drugs having a marked differential effect on the respiratory and skeletal muscles would be less than if they affected the nervous system more generally. In view of the fact that the respiratory muscles themselves are often primarily concerned in undesirable reflex responses during an operation, it is a matter for conjecture how far they can be spared by the muscular relaxant without either prejudicing the stability of the relaxation or compromising by using deeper supplementary anaesthesia.

From our experience up to date we are of the opinion that, if C_{10} is used in upper abdominal surgery, a better balanced effect is obtained by employing a somewhat deeper plane of anaesthesia, using cyclopropane or nitrous oxide oxygen and ether, than by trying to reach the desire goal by 'flogging' the relaxant.

While we still greatly prefer d-tubocurarine in upper abdominal or thoracic surgery, we have found C_{10} very useful in the other fields mentioned where it can give *finesse* to the anaesthesia with, apparently, no disadvantages or dangers. Final judgment must await the recorded experience of large numbers of cases and the future of C_{10} will, to a large extent, depend on whether time reveals any serious complications or side effects. The results up to date are, however, promising.

We wish to express our thanks to the surgeons of the Johannesburg Hospital whose kind co-operation, especially in the earlier stages, made these clinical trials possible. We are indebted to Dr. K. L. M. Martienssen for her able assistance with clinical experiments and for observations on many cases. Our thanks are also due to members of the University Staff for assistance in preparing proofs and charts, and to Messrs. Allen & Hanburys Ltd. for supplies of the drug Eulissin.

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NEW PREPARATIONS AND APPLIANCES

CHLOR-TRIMETON MALEATE—SCHERING

Chlor-Trimeton Maleate is a synthetic compound that has the property of antagonizing many of the characteristic effects of histamine and is of value clinically in the prevention and relief of many allergic manifestations.

Each Tablet of *Chlor-Trimeton Maleate* contains 4 mg. of 1-parachlorophenyl-1-(2-pyridyl)-3-dimethylaminopropane maleate, which has the generic name of chlorprophenpyridamine maleate.

The chief advantages of *Chlor-Trimeton Maleate* tablets as antihistaminic therapy are the high order of safety, the high potency resulting in lower dosage, and the relative infrequency of unwanted side actions such as drowsiness, nausea, etc. *Chlor-Trimeton Maleate* is the most potent antihistaminic known to date.

Chlor-Trimeton Maleate is indicated for symptomatic relief of some of the manifestations of the allergic state such as hay fever, urticaria, vasomotor rhinitis and allergic eczema. The degree of symptomatic relief in these conditions varies from individual to individual, but the preparation on the basis of existing evidence may be regarded as producing very satisfactory results, particularly in hay fever, with a comparatively small percentage of side reactions, and in urticaria, and some degree of relief in a fair percentage of cases of vasomotor rhinitis, allergic eczema and asthma. Some cases of migraine may be expected to respond favourably to this type of therapy.

In no sense of the word should *Chlor-Trimeton Maleate* be regarded as curative in these conditions, and every effort should be made to find the offending allergen, so that desensitization and other established clinical procedures may be instituted when indicated. Indications are that *Chlor-Trimeton Maleate* is effective in some cases which have proved refractory to treatment with other antihistamines.

On the basis of existing evidence deduced from using drugs of the same general class as *Chlor-Trimeton Maleate*, this preparation may be considered worthy of a clinical trial in conditions such as drug sensitivity, gastro-intestinal allergy, physical allergy and pruritus of non-specific origin.

The following dosage is recommended:

Adults: One 4 mg. tablet every four to six hours, or at intervals frequent enough to control the symptoms. For many patients one-half tablet is adequate.

Children under 12: One-half tablet three or four times daily to control symptoms. For infants one-quarter tablet is sufficient.

One of the principal advantages of *Chlor-Trimeton Maleate* is its relative freedom from side actions such as are frequently encountered with other members of this general class of drugs. The usual side actions such as drowsiness, nausea, dizziness, etc., do occur, but it is the opinion of reliable investigators that they occur much less frequently than with other similar preparations. Nevertheless, patients should be cautioned against engaging in mechanical operations which require alertness, such as operating a motor car, until it is known that they do not respond to the drug by becoming drowsy or dizzy.

Chlor-Trimeton Maleate tablets are manufactured in the Union of South Africa by Scherag (Pty.), Limited, Johannesburg, for and under the formula and technical supervision of Schering Corporation, Bloomfield, N.J.

Chlor-Trimeton Maleate tablets of 4 mg. each are available in bottles of 100 and 500.

VERENIGINGSNUUS : ASSOCIATION NEWS

CLINICAL MEETING OF THE ASSOCIATION OF SURGEONS (JOHANNESBURG). SUMMARY OF PROCEEDINGS OF THE MEETING HELD ON 21 MARCH 1950

(a) *A Case of Painless Repeated Gastro-Intestinal Bleeding* (*Mr. J. Hamman*). The patient was a Bantu male aged 41 years. He was admitted to a medical ward of the Coronation Hospital in June 1947 complaining of 'black' motions.

History and Progress, First Admission: He was quite fit with no dyspeptic or other history until 48 hours before admission, when he passed several melaena stools and vomited blood on three occasions. He was in a state of severe shock associated with blood loss. He was cold and clammy, with a pulse of 130 per minute, a blood pressure of 80/60 mm. Hg. and a red cell count of only 1.99 millions per c.mm. His blood urea was 92 mg per 100 c.c. Apart from evidences of shock and blood loss, a physical examination was negative. He was given 1,000 c.c. of blood and thereafter his condition stabilized. A Wassermann test was negative. His blood picture returned to normal as did the blood urea level. Stools, however, were repeatedly positive for occult blood.

An X-ray examination shortly after the initial recovery showed, on barium meal, what appeared and was reported to be a duodenal ulcer crater in the posterior wall of the first part of the duodenum. An apparent filling defect anteriorly in the first part of the duodenum was not commented on.

The patient was treated as a duodenal ulcer, and a repeat X-ray examination performed about two weeks later showed on this occasion no evidence of ulceration.

Second Admission. After remaining fit with no symptoms at all for some months, the patient again experienced attacks of melaena stools followed by faintness and was re-admitted. Once again there was evidence of shock and blood loss. Again there was no dyspeptic history nor one of abdominal pain. Apart from evidence of blood loss and secondary anaemia, the blood picture was normal and did not suggest a blood dyscrasia.

After improving, the patient was given a test meal, which revealed absence of free HCl and a very low amount of total acid.

A re-X-ray examination revealed a doubtful duodenal ulcer. The appearance of a duodenal filling defect seen earlier was not noted. He was, as before, treated as a duodenal ulcer and discharged shortly after his X-ray examination.

Third Admission. About six months after his initial visit the patient was again admitted to hospital. On this occasion he had some incidental complaint, a swollen ankle which resolved in a day or so. He said that he had had no dyspeptic episode or abdominal pain, but had had attacks of faintness after passing black stools on occasion. Once again a physical examination was negative, a blood examination

showed a degree of secondary anaemia and a fractional test meal showed a very low free HCl level and a relatively low total acid.

On being referred for X-ray examination he fainted while being screened, and this was followed by blood in the stools.

A renewed X-ray examination later failed to show any ulcer crater but a constant filling defect, somewhat variable in size, was noted anteriorly in the first part of the duodenum (Fig. 1).

At this stage he was transferred for surgical exploration.

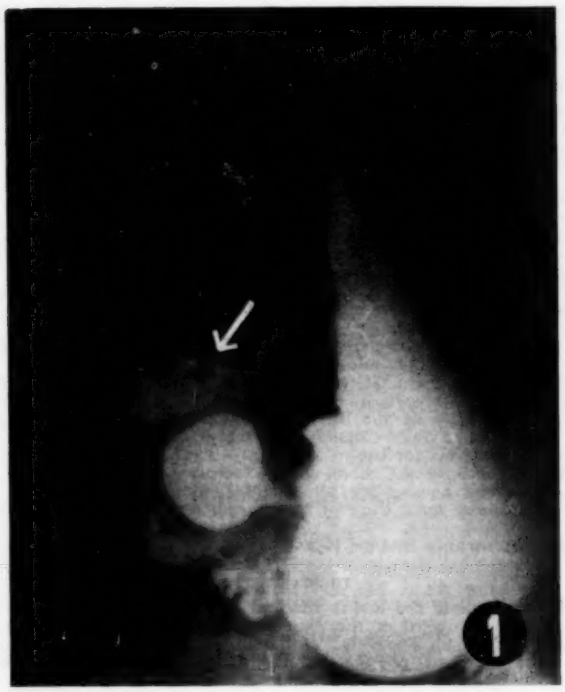

Fig. 1. Duodenal varix seen as a duodenal filling defect.

DISCUSSION

Mr. Fleming said that in repeated gastro-intestinal bleeding of this nature, his impression was that the more massive episodes were probably exacerbations of a more constant leak. Both carcinoma of the stomach and duodenal ulcer must be first thought of. The apparently normal X-ray studies in the stomach would not, in themselves, rule out gastric carcinoma. Duodenal ulcer, too, had to be seriously considered. Variable X-ray studies were not against the diagnosis, and the bleeding was in keeping with it. Such bleedings could be painless. The low to absent free HCl was not in keeping, though had the original test meal been done shortly after a haemorrhage, the low result could result from a depression of gastric function following the systemic upset of a massive bleeding. Other less common conditions such as gastric syphilis warranted consideration.

On the whole, he felt that the repeated painless bleedings and confirmation of a low gastric acidity by a later meal, as well as the suggestion of a duodenal filling defect must lead to the consideration of a simple duodenal tumour, and he would make this diagnosis, though with reservations.

Mr. Tucker said that unusual forms of gastro-duodenal bleeding do occur. He recalled a recent case of bleeding oesophageal varices following compression of the splenic veins by a teratomatous cyst of the pancreas. The case under discussion, he thought, was probably a simple tumour.

Mr. Kark enquired about the presence or absence of fixity of the duodenum on screening. Mr. Hamman in reply said that the duodenum did not appear to have been unduly fixed.

Mr. Lewin enquired about the presence of superficial angiomata. There were none.

Mr. Hamman remarked that his own diagnosis had been that of a simple duodenal tumour. He had been impressed by the fact that duodenal ulcer is not common in the Bantu, and would be less so where there was evidence of a low to absent free HCl as in this patient. This, combined with the absence of any dyspepsia, and the painless nature of the bleedings, as well as the duodenal filling defect, had led to his diagnosis. He remarked, however, that the plates showing an apparent ulcer crater seen in the posterior aspect of the duodenum, had been mislaid when the case was referred to him, and his diagnostic problem had, in consequence, been made easier.

Operative Findings. At laparotomy a dilated tortuous aberrant venous radicle, apparently draining into the gastro-duodenal vein, was found to involve the duodenum. The vein passed through the duodenal wall and was incompetent. There was both sub-serous and sub-mucous haematoma formation. There was no ulceration of the duodenum. In addition, but unconnected with this varix, there was a cavernous haemangioma of the liver. There was no congestion of the rest of the portal tree and the duodenal varix appeared to be a local and probably congenital anomaly. After a resection of the duodenum and pylorus, the patient had remained free from symptoms for over a year.

He had not found reference in the literature to this condition, and it might well have been a unique case.

Argentaffinoma of the Small Bowel (*Dr. D. Tanne*). A Bantu male, aged 62 years, complained of mild lower abdominal pains for eight months, considerably worse for the last two months, during which time he also noticed lower abdominal distension and the periodic appearance of a 'lump' in his abdomen. He was constipated and suffered from general weakness and marked loss of weight for one year. There was no history of diarrhoea or blood or mucus in his stools.

Examination revealed an emaciated subject with well-marked visible peristalsis and signs of chronic small bowel obstruction; a palpable and slightly irregular liver and three hard, irregular nodules per rectum, which appeared to be extra-luminal.

A scout film of the abdomen showed a single fluid level in the right iliac fossa and minimal gas in the small bowel. A barium enema and sigmoidoscopy were normal.

A pre-operative diagnosis of argentaffinoma of the small bowel was made, by excluding simple tumours and inflammatory lesions in view of the three nodules felt per rectum and the palpable liver; and carcinoma and lymphosarcoma of small bowel on the grounds of the lower age incidence in these, and the absence of blood in the stools.

A laparotomy on 10 February 1950 confirmed the pre-operative diagnosis with a single tumour situated in the last two feet of ileum. There were secondaries in glands, liver and peritoneum. Histology of a gland removed at operation confirmed the diagnosis. A side-to-side anastomosis of terminal ileum was done and a post-operative follow-up showed marked improvement with a gain in weight.

The prognosis of carcinoids of the bowel, according to Dundon (1948), is relatively good—best in the appendix with 4% metastases (only to glands and never to liver); less satisfactory in the small intestine with 20-40% metastases, and worst elsewhere in the gastro-intestinal tract. They are considered as carcinomata of Broder's grade I type.

The incidence of argentaffinoma in malignant disease of the small bowel varies considerably, viz. 23% (Dockerty and Ashburn, 1943), and only 8.3% in Ariel's series (1939).

Dr. Webster demonstrated slides and discussed the pathology and pointed out that the term 'carcinoid' should only be applied to appendicular tumours, while in the rest of bowel they are argentaffin carcinomata or argentaffinomata.

REFERENCES

Ariel (1939): Arch Path., **27**, 25.
Dockerty and Ashburn (1943): Arch. Surg., **47**, 221.
Dundon (1948): Amer. J. Roentgenol., April.

IN MEMORIAM

GIDEON ALBERTYN BEYERS

Gideon Albertyn Beyers has passed on. It seems customary to say in any appreciation of this nature that 'he leaves a gap which will be hard to fill'. In the case of Giel Beyers this statement is true in every sense of the word. The gap he has left will not only be hard but impossible to fill. Here was a man who was truly 'the beloved physician' and I am proud to be able to say—he was my friend.

I knew him for 30 years and never once in all that long period was he anything but pleasant, friendly and kind. When I was a student, home on vacation, he treated me even then as a colleague and put himself out to help me and explain things which I might like to know.

His philosophy, as I saw it, was simple and straightforward —the differentiation between what was right and what was wrong and if he ever did anything which could be termed 'wrong', then he was unaware of it.

His cheerful and morally solid personality was an entity of some importance in the community and the relationship of doctor to patient, as he saw it, was something I shall never forget and something I have tried, in my professional life, to emulate. I can pay no greater compliment to Giel Beyers than that.

The confidence he inspired, his cheerful outlook on life, his great capacity for sympathy and understanding and his sound clinical ability which, under the greatest stress, never faltered, were attributes any man could be proud to posess.

Yes, Beyers belonged to the class of man fast dying out in our profession. One can but say that the beauty of the man's character was evidenced by the love his fellow-men bore him.

It was a great shock to all of us when we realized that his illness had but one ending. He knew it, too, yet never once did he show any sign that he knew nor ever did he complain, but bore his burden in the manner no one but Beyers could have borne it—cheerfully and uncomplainingly although he knew he was a doomed man.

To have seen him during the last few weeks was an inspiration of fortitude and patience.

He was a wonderful husband and father, and his bereaved family may rest assured that he is mourned by many and if it be any consolation then it can be great.

My appreciation of my old and beloved friend, if lacking in force of expression, most certainly makes up its deficiency by its sincerity.

I say farewell to him in the full knowledge that the memory of Giel Beyers will ever remain fresh and dear.

D. H-N.

THE LATE DR. EGGERS

A correspondent writes: Dr. med. Theodor Eggers, born in Germany on 24 October 1896, died in Windhoek on 15 July 1950. He studied in Germany and after completion of his study he occupied a position as a surgeon in a large hospital in Hamburg for many years. Since 1929 he practised in Windhoek, where he had a large general practice. Throughout the country he had a good reputation particularly as a surgeon.

PASSING EVENTS

The South African National Council for Mental Health has recently issued a publication, by way of an experiment, free of charge. It is called *Mental Health, South Africa/Geestesgesondheid, Suid-Afrika,* and can be obtained from the South African National Council for Mental Health, 426 Empire Buildings, Kruis Street, Johannesburg.

The first issue (April 1950) emphasizes the view that positive mental health is something more than the avoidance of acute mental illness. It involves community service on the part of each citizen. By taking an interest in and helping the mental health movement, each of us plays a necessary part in promotive work for mental health. The issue also contains a summary of Dr. Moross' address at the Council meeting. His subject was *Social Erosion and the Promotion of Mental Health.*

This bilingual publication contains many other items of interest to medical practitioners, who can obtain an unabridged version of Dr. Moross' lecture on application to the Council for Mental Health, P.O. Box 2587, Johannesburg.

The Council also draws attention to Technical Report Series No. 9 of the World Health Organization which comprises the report on the first session of the Expert Committee on Mental Health. This can be obtained from the World Health Organization, Palais des Nations, Geneva. Price 2s. 3d.

BARAGWANATH MEDICAL SOCIETY

A meeting of this society will be held in the Nurses' Training School on Monday, 28 August 1950 at 8 p.m.

Dr. V. H. Wilson will give an address on *Oxygen Administration.*

B.M.A. MEDICAL FILMS

The British Medical Association recently presented a new medical film which had its first showing at St. George's Hall, Liverpool, on 18 July 1950, with Glaxo Laboratories Ltd. acting as sponsors. The film was entitled *The Treatment of Infections of the Hand.*

The film provides a full screen record of the latest technique available for dealing with such conditions as whitlows, abscesses, infections of the nail bed, and so on. It will be shown at meetings of the profession in different parts of the country and will also be used in hospitals for both undergraduate and post-graduate audiences. It is primarily intended for the practising doctor, whether specialist or general practitioner, although it will also be valuable in the training of medical students.

The film has been prepared in the Hand Clinic of University College Hospital, London, under the direction of Prof. R. S. Pilcher, M.S., F.R.C.S., assisted by Mr. A. G. Riddell, *M.B.E.*, F.R.C.S. and Mr. B. B. Milstein, F.R.C.S., and was produced for the B.M.A. by the Realist Film Unit.

The B.M.A. Film Committee has also been responsible for two other films for use in teaching:—one by Mr. A. Dickson Wright, M.S., F.R.C.S. on *Total Sympathectomy for Hypertension* and another by Mr. Hugh Reid, M.D., F.R.C.S. on *Thymectomy for a Case of Myasthenia Gravis.*

THE KATHERINE BISHOP HARMAN PRIZE FOR THE ENCOURAGEMENT OF RESEARCH INTO THE DISORDERS INCIDENT TO MATERNITY

The Council of the British Medical Association is prepared to consider an award of the *Katherine Bishop Harman Prize* in the year 1951. The value of the Prize is £75.

The purpose of the Prize, founded in 1926, is the encouragement of study and research directed to the diminution and avoidance of the risks to health and life that are apt to arise in pregnancy and child-bearing. It will be awarded for the best Essay submitted in open competition, competitors being left free to select the work they wish to present, provided this falls within the scope of the Prize.

Any registered medical practitioner in the British Empire is eligible to compete.

Should the Council of the Association decide that no Essay submitted is of sufficient merit, the Prize will not be awarded in 1951, but will be offered again in the year next following this decision, and in this event the money value of the Prize on the occasion in question shall be such proportion of the accumulated income as the Council shall determine. The decision of the Council will be final.

Each Essay must be typewritten or printed in the English language, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto and enclosing the candidate's name and address.

The title of the proposed essay and the motto should be notified in writing to the Secretary by 1 November 1950, and a form for this purpose can be obtained from the Secretary. Essays must be forwarded so as to reach the Secretary, British Medical Association House, Tavistock Square, London, W.C. 1, not later than 31 December 1950.

Inquiries relative to the Prize should be addressed to the Secretary.

Charles Hill,
Secretary.

British Medical Association House,
Tavistock Square,
London, W.C. 1.
August 1950.

OFFICIAL ANNOUNCEMENT

ASSISTANT MEDICAL SECRETARY

Applications are invited from bilingual medical practitioners for the post of Assistant Medical Secretary of the Medical Association of South Africa at its Head Office in Cape Town.

The salary scale is £1,250 × 50—£1,500 plus cost-of-living allowance at Government rates (£208 per annum for married persons and £57 4s. for single persons).

The successful applicant will be required to subscribe to the Association's Pension Scheme.

Applications should be addressed to the Medical Secretary, P.O. Box 643, Cape Town, and should be accompanied by three recent testimonials. Closing date for the receipt of applications 31 August 1950.

AMPTELIKE AANKONDIGING

MEDIESE ASSISTENT-SEKRETARIS

Aansoeke deur tweetalige geneeshere word gevra vir die betrekking van Mediese Assistent-Sekretaris van die Mediese Vereniging van Suid-Afrika by sy Hoofkantoor in Kaapstad.

Die salarisskaal is £1,250 × 50—£1,500 plus lewenskostetoelae teen Regeringskaal (£208 per jaar vir getroude persone en £57 4s. vir ongetroudes).

Van die suksesvolle aansoeker sal verlang word dat hy by die Vereniging se pensioenskema aansluit.

Aansoeke moet gerig word aan die Mediese Sekretaris, Posbus 643, Kaapstad, en moet vergesel word van drie resente getuigskrifte. Sluitingsdatum vir die ontvangs van aansoeke 31 Augustus 1950.

REVIEWS OF BOOKS

STREPTOMYCIN

Streptomycin: Nature and Practical Applications. Edited by Selman A. Waksman, Ph.D. (Pp. 618 + xii, with 89 figures. 76s. 6d.) London: Baillière, Tindall & Cox. 1949.

Contents: 1. Microbiological and Chemical Aspects. 2. Antibacterial and Pharmacologic Properties of Streptomycin. 3. Clinical Uses of Streptomycin. 4. Miscellaneous Uses of Streptomycin.

Antibiotics useful in medicine are appearing at an ever increasing rate. It is already almost impossible to keep abreast of current literature on these therapeutic substances, and the general practitioner in particular will have to depend on authoritative books. This one, edited by the discoverer of streptomycin, is at the same time comprehensive. No less than 58 authors have contributed to its pages. Each contribution is detailed and supported by an adequate bibliography.

The subdivision into four sections has inevitably caused some repetition. This, however, is an advantage. Those interested in the pharmacological, bacteriological and technical aspects and in particular the mode of action of streptomycin will find in the first two sections as much information and reference to the literature as he requires. A useful feature is a table listing the susceptibility to the antibiotic of all micro-organisms which have so far been tested. Of particular interest also is the detailed consideration given to the phenomena of streptomycin resistance and streptomycin dependence—phenomena which apart from their academic interest may be of fundamental importance in elucidating the mode of action of the antibiotic.

The third and biggest section is concerned with the clinical uses of streptomycin.

Chapters are devoted to general subjects such as clinical indications and methods of administration of the antibiotic, as well as its use in individual diseases or disease groups. Its use in the treatment of tuberculosis is, of course, dealt with in some detail. In this and the other clinical chapters those bacteriological aspects, a knowledge of which is important for rational therapy, are again dealt with.

The last section covers less familiar though no less important aspects of the uses of streptomycin, e.g. rendering virus suspensions free of contaminating bacteria, or its use in veterinary medicine and agriculture.

This is without doubt a valuable and timely addition to medical literature and one which will be of great value to both the practitioner and the laboratory worker.

MENTAL READJUSTMENT

Mental Readjustment. By Sidonie Reiss. (Pp. 167. 10s. 6d.) London: Victor Gollancz Ltd. 1949.

Contents: *Part I. Theory* 1-6.
Part II. Practice. 7. A Child who Falls on her Knees. 8. The Silent Child. 9. A Case of Play-Therapy. 10. 'I can't get up in the morning' 11. Two Anxiety-Neuroses. 12. The Problem of the Application of Individual-Psychological Therapy.

The first 65 pages of this little book consist of six well-written chapters, which describe the main concepts of Adler's individual psychology.

The following six chapters consist of some histories of typical cases which demonstrate the rationale and technique of the Adlerian method of psychotherapy.

The psychiatrist and psychologist will not gain any new knowledge from this little book, but those who have a part to play in the understanding of children and the development of their therapy, as is the case with teachers, parents and those who work in Child Guidance Clinics, will find in this little volume the main tenets of Adler's individual psychology in an easily readable form.

THERAPEUTIC EXERCISES

Principles and Practice of Therapeutic Exercises. By Hans Kraus, M.D. (Pp. 309 + xxi, with 94 figures. 47s. 6d.) London: Blackwell Scientific Publications, Limited. 1949.

Contents: *Part I. Fundamental Working Principles.* 1. Clinical Patho-Physiology of Muscle Exercises. 2. Measurements. 3. Exercise Techniques. 4. Treatment of Pain and Painful Muscle Spasm. 5. The Exercise Prescription. 6. Supportive Prescriptions.
Part II. The Application of Therapeutic Exercises to Particular Fields. 7. Musculo-Skeletal Conditions. 8. The Nervous System. 9. Respiration.
Part III. General Exercises. 10. General Exercises. Bibliography. Index.

Remedial exercises have been used by the physician throughout the history of medicine. The disciples of Aesculapius, Galen and Ambrose Paré, used specific exercises for their remedial effects. Modern exercise techniques are based on the system of movements laid down by Pehr Ling and J. Arvedson, both of Sweden.

The prescription and supervision of therapeutic exercise to-day lies almost entirely in the hands of the physiotherapists and while this group of medical ancillaries carries out its duties acurately and conscientiously, its work would be facilitated considerably if an accurate exercise prescription was given by the physician.

The dosage of exercise, in terms of progression of power and time, and a clear picture of the goal to be achieved by this form of therapy should be clearly indicated. This type of prescription is all too rarely given.

This book attacks the problem in an over-simplified fashion. The physiology of exercise is indicated in rather a cursory manner and one feels that this important aspect of the problem should have been the basis of the book rather than merely the introduction.

The subject matter is divided into general and local exercise. Emphasis is placed on free movement and the value of apparatus is minimized. This is a debatable point when the value of gravity-free exercises by means of the Guthrie Smith sling apparatus is considered in the treatment of anterior poliomyelitis and perpiheral nerve injuries.

In the treatment of cerebral palsy the importance of teamwork between the paediatrician, orthopaedic surgeon, specialist in physical medicine, educational authorities and social workers is rightly emphasized. This chapter is based on the current work of Winthrop Phelps and gives an accurate picture of the

valuable help that can be given simply to these handicapped children.

Posture is considered from the more specific aspect of muscular and skeletal dysfunction with little reference to the more remote effects on the thoracic and abdominal viscera.

The book is well illustrated and produced, but sacrifices broad physiological principles in its effort to be specific.

POLIO VICTIM

My Place to Stand. By Pentz Plagemann. (Pp. 241; 10s. 6d.) London: Victor Gollancz Ltd. 1949.

The author is undoubtedly honest and well meaning, but unfortunately for him and us, these are not the only qualifications necessary for good writing.

All we are able to glean from this little book, which abounds in clichés and sententious remarks, is that no cure can be effected without co-operation between patient and doctor, that practically all sailors habitually and even gleefully contact venereal disease, and that sailors are shockingly coarse though generally goodhearted.

The author, a non-combatant, joins the U.S. Navy as a pharmacist's mate. The fact that he has always fainted at the sight of blood and that this failing may cost the lives of others in an emergency, does not deter him for one instant. He makes a manly effort to overcome this weakness, contracts poliomyelitis, determines to walk again by the next Christmas, and after a rather long-winded account of his treatment, along with other more or less co-operating patients at Warm Springs, informs us that he did succeed in walking on Christmas Day.

As the result of his experiences he comes to the astounding conclusion that he need not worry so much about himself, and presumably about the sailors also, as Man is an imperfect creature anyway.

EYE, EAR, NOSE AND THROAT: 1949

The 1949 *Year Book of the Eye, Ear, Nose and Throat* (*August* 1948-*October* 1949). *The Eye,* edited by Derrick Vail, M.D., D.Oph. (Oxon.), F.A.C.S. *The Ear, Nose and Throat,* edited by Samuel J. Crowe, M.D., with the collaboration of Elmer W. Hagens, M.D. (Pp. 580. With numerous illustrations. $5.) Chicago: Year Book Publishers Inc.

Contents: The Eye: 1. Introduction. 2. The Eyelids and Lacrimal Apparatus. 3. The Orbits and Exophthalmos. 4. The Conjunctiva. 5. The Cornea. 6. The Iris and Ciliary Body. 7. The Lens and Cataract. 8. The Retina. 9. The Choroid. 10. The Optic Nerve. 11. Glaucoma. 12. Refraction and Motility. 13. Neurology and Visual Fields. 14. Therapy. 15. Surgery. 16. Miscellaneous.
The Ear: 1. Poliomelitis and Tonsillectomy. 2. Hearing; Injuries to Hearing Function. 3. The Outer and Middle Ear. 4. Otosclerosis and the Fenestration Operation. 5. The Inner Ear, the Eighth Nerve and its Connections.
The Nose and Throat: 1. General Considerations. 2. Nose and Sinuses. 3 Mouth, Nasopharynx and Pharynx. 4. The Larynx. 5 Bronchi and Esophagus.

This book follows the patterns of its predecessors, devoting half its space to the eye and half to diseases of the ear, nose and throat.

As the title implies, the contents are devoted entirely to abstracts of articles in journals published during 1948, the majority of them from the U.S.A. This gives the reader an excellent bird's eye view of the problems exercising the minds of contemporary surgeons. As is often the case in a book of this kind, the editor's comments at the end of an article are more enlightening, and at the same time more balanced than those of the author, whose eyes are often blinded to the end result, by the brilliant intricacies of a particular operation.

Wonderful results are reported, by several workers, in the streptomycin treatment of tuberculous laryngitis, a disease which, before the discovery of this drug, was almost invariably fatal. It is also pointed out, though, that this antibiotic can have very serious effects on the labyrinth—often permanent—which tend to be overlooked while the patient is in hospital, only to become evident after his discharge, when he begins to earn his living again.

An adequate index, both of subject matter and of authors, makes this book valuable to post-graduate students in these subjects, and also to the established surgeon, who often has too little time to devote to reading the individual articles in full.

CORRESPONDENCE

PART-TIME POSTS IN HOSPITALS

To the Editor: In his letter dated 15 June 1950, accusing certain specialists with breach of faith in regard to the services they contracted to do, 'Equity' contends that 'no doctor will report a colleague but he can ventilate the matter in his own *Journal*'.

In my opinion it would have been preferable, before making a general accusation against certain colleagues for publication in the *Journal*, if in the first instance 'Equity' had addressed his complaints to the Medical Superintendents of the Reef Hospitals concerned. At his request his letters would have been treated as confidential.

I would like to emphasize that I doubt whether it is good policy for the *Journal* to publish a letter casting reflection on certain members of the profession without stating details, unless it was known that the Institutions concerned had knowledge of the complaints and had not taken any action.

Lewis S. Robertson.

P.O. Box 413,
Johannesburg.
17 July 1950.

To the Editor: Why doesn't 'Equity' get it off his chest by giving the true facts of the matter to the Medical Superintendent of the hospital concerned? If he has sufficient faith in his cause, he should stand up squarely to the matter and not waste paper and ink and space in your *Journal*.

Granted it is an invidious matter reporting a colleague, but justice and efficiency are rarely attended by popularity.

M. Tonkin, M.B., B.Ch.

General Hospital,
Johannesburg.
18 July 1950.

ONYALAI IN SOUTH WEST AFRICA

To the Editor: I was interested in Dr. J. L. D. Paisley's letter on the occurrence of onyalai in the Cape Province. In the correspondence columns of the *South African Medical Journal* of 1938 I recorded five cases of onyalai amongst Hottentots in the southern-most district of South West Africa, just north of the Orange River.

J. Helman.

4 Joubert Street,
Vasco, C.P.
24 July 1950.

THE PUBLIC AND PROFESSIONAL PROBLEMS

To the Editor: It was recently declared that the ultimate in art consists of a straight line, a semi-circle and a dot. For many of us it will indeed be inspiring to see that our profession is fast approaching that stage too, in that certain elements are inviting the general public to help us solve our domestic problems.

I think we ought to develop this method to perfection and send lists of our difficulties to Pretoria from where a questionnaire can be issued to the public. I have, for example, had some difficulty recently with the reading of an encephalogram. It would be good, too, to know the optimum age of a cat, the skin of which will cure pneumonia, and the latest formula of the Kroonstad cancer plaster.

Penultimate.

Cape Town.
25 July 1950.